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PROPOSED
LIVESTOCK GRAZING & WILDERNESS MANAGEMENT

for the

EASTERN SAN DIEGO CO. PLANNING UNIT

Draft Environmental Impact Statement

United States Department of the Interior
Bureau of Land Management
California

88026167

March 3, 1849

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Riverside District Office
1695 Spruce Street
Riverside, California 92507

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Dear Reviewer:

Enclosed for your review and comment is the draft environmental impact statement prepared on the Proposed Grazing and Wilderness Management for the Eastern San Diego County Area in the El Centro Resource Area of the Riverside District, California.

The statement was prepared pursuant to Section 102 (2)(c) of the National Environmental Policy Act of 1969. It is based on information from the Bureau of Land Management and other sources, including Federal, State, and local agencies, and interested private organizations and citizens.

Comments on the environmental statement should be received by this office no later than September 21, 1980, in order to be included in the Final Statement. Comments received after the established 45 day review period will be considered in the subsequent decision process, in the event the comments are received too late for inclusion in the final statement. Your comments should be returned to:

El Centro Resource Area Manager
Bureau of Land Management
833 South Waterman Avenue
El Centro, California 92243

Sincerely,

Gerald E. Hillier
District Manager

Enclosure

EAST
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DES

Department of the Interior

Draft Environmental Statement
Proposed Grazing and Wilderness Management for the Eastern San Diego County Area (McCain Valley) California

Prepared by
Bureau of Land Management
Department of the Interior

State Director, California State Office

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Denver, CO 80225

COVER SHEET

(X) Draft () Final Environmental Statement

U.S. Department of the Interior, Bureau of Land Management, Riverside District, California

1) Type of Action: (X) Administrative () Legislative

2) The EIS area is located 60 miles east of San Diego, California, and encompasses 98,902 acres of public land. The Bureau of Land Management proposes to implement a grazing management program on 67,903 acres and to recommend 40,086 acres suitable for wilderness designation. The overall objectives of the proposal are to improve range vegetative conditions, which will provide a continuing supply of forage for livestock and wildlife, and to preserve wilderness characteristics and the naturalness of the area from man's imprint, which will preserve solitude and the primitive recreation experience. The proposed action for grazing management will exclude 30,999 acres from livestock grazing; initially allocate 2,914 animal unit months (AUMs) of forage to livestock and 108 AUMs to big game; expand forage production to an anticipated 6,217 AUMs through the implementation of deferred rotation treatments on 67,423 acres and land treatments on 7,261 acres (400 acres mechanical and 6,861 acres burning) (with future allocations to be made in proportion to present allocations); and provide livestock facilities (including 67 miles of fences and 37 watering devices) necessary to implement specific grazing management systems. Livestock grazing is allocated with consideration of wildlife and other resources according to inventoried carrying capacities to accomplish the proposed action objectives.

   The proposed action recommends wilderness designation, for Congressional action within two years, on the Sawtooth Mountain WSA (25,515 acres) and the Carrizo Gorge WSA (14,571 acres). It also recommends consideration in the Wilderness Management Plan (WMP) request for special dispensation from Congress to use mechanized equipment in the development of range facilities for livestock and wildlife. Areas recommended as unsuitable include 958 acres in the Table Mountain WSA; 5,629 acres in the Sawtooth Mountains WSA; 2,131 acres in the San Ysidro WSA; and 5,265 acres in the San Felipe WSA.

3. Summary of Environmental Impacts

Grazing

The net result of the proposed action would be a general increase in productivity. Implementation of specific grazing management and/or land treatments on approximately 67,903 acres of public land will result in an increase in vegetative production from 3,409 AUMs to approximately 6,217 AUMs, an 82 percent increase by the year 2001. As a result, soil losses will be reduced 30 percent over present conditions. Wildlife habitat would be improved on 2,540 acres of chamise chaparral, 4,362 acres of mixed chaparral, 8,997 acres of semi-desert chaparral, 12,680 acres of enriched desert scrub, and three miles of riparian vegetation. This would benefit bighorn sheep, mule deer, raptors, small birds, and small rodents. Trampling of cultural resources will increase very slightly. Cultural resources will also be subject to impacts from burning and concentration at water and fence developments. Recreational opportunities for hunting deer, quail, and small game would improve.

Present licensed use (4,925 AUMs) will be reduced initially to 2,914 AUMs (41 percent below present licensed use). By the year 2001 forage production would increase by 3,303 AUMs to 6,217 AUMs, resulting in restoration of all reductions and an additional 1,292 AUMs available for livestock and wildlife.

Wilderness

The designation of a WSA as a wilderness area will establish protection of wilderness resources as that area's dominant objective. This will generally result in reduced soil erosion, increased game and hunting success, and a greater opportunity for solitude and primitive recreation. Sensitive plants and wildlife, cultural resources, and Native American values will receive added protection. Grazing operations and mineral entry and mining in existence at the time of designation will continue. Pre- and post-fire suppression techniques, vegetative manipulations, introduction of exotic plants and animals, and developed recreation activities will generally be precluded.

An area not designated as wilderness will allow a broader utilization of resources. Intensive uses prohibited in a wilderness area will be allowed. However, wilderness qualities may be impaired to a degree that future designation will be precluded.

4. Alternatives Considered:

a) Grazing
   - i) No Grazing
   - ii) Intensive Use - (Livestock Maximization)
   - iii) Proposed Action
   - iv) Limited Use - (Enhancement of the Resource Values)
   - v) No Action

b) Wilderness
   - i) Maximize Wilderness
   - ii) No Wilderness
   - iii) Proposed Action
   - iv) Limited Wilderness

5. Comments have been requested from the following: (See Attachment)

6. Date statement made available to EPA and to the public:

7. Final date for report of comments:

8. Further information may be obtained from:

Mr. Gerald E. Hillier
Riverside District Manager
1695 Spruce Street
Riverside, CA 92507
(714) 787-1428

Comments on the Draft Environmental Statement will be requested from the following agencies and interest groups:

FEDERAL

Environmental Protection agency

Advisory Council on Historic Preservation

U.S. Department of the Interior
    Bureau of Mines
    Heritage Conservation and Recreation Service
    Water and Power Resources Service
    Geological Survey
    Fish and Wildlife Service
    Bureau of Indian Affairs
    Natural Resource Library

U.S. Department of Agriculture
    Environmental Quality Affairs
    Forest Service
    Soil Conservation Service
    Animal Health Services

U.S. Senators (California)

U.S. House (California)

Department of Commerce

Department of Justice

Customs

Department of Treasury

Border Patrol

CALIFORNIA - STATE AGENCIES

Office of the Governor

Office of Planning and Research

State Historic Preservation Office

Resources Agency

    Department of Water Resources
    Air Rresources Board
    Division of Mines and Geology
    Division of Oil and Gas

Resources Agency (cont'd)

- Native American Hertiage Commission Service
- Department of Fish and Game
- Department of Parks and Recreation
- Department of Forestry

CALIFORNIA - LOCAL AGENCIES

San Diego County Board of Supervisors

San Diego County Office of Fire Services

Integrated Planning Office

San Diego County Parks and Recreation

San Diego County Air Pollution Control

San Diego County Environmental Division

San Diego Agricultural Commissioners Office

San Diego County Farm Advisor

Comprehensive Planning Organization (CPO)

OTHER ORGANIZATIONS

Natural Resources Defense Council, FNC

Sierra Club

California Native Plant Society

Audubon Society

Desert Bighorn Council

Wilderness Society

California Wildlife Federation

California Hawking Club

San Diego Cattlemen's Association

American Motorcycle Association

Boys Scouts of America

San Diego County Archaeological Society

OTHER ORGANIZATIONS (cont'd)

Pacific Crest Trail Blazers

California Natural Areas Coordinating Council

Desert Protective Council

Citizens ORV Committee

Southwestern Prospectors and Miners

Nature Conservancy

California Association of 4 Wheel Drive Clubs

Riverside District Grazing Advisory Board

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

INTRODUCTION

The Eastern San Diego County Planning Unit Grazing and Wilderness Environmental Impact Statement (EIS) examines the impacts of implementing each of five proposed grazing management and four wilderness suitability alternatives on 98,902 acres of public land in the East San Diego County Planning Unit.

The grazing management proposals are designed to provide intensive and less intensive management for 11 existing and two proposed allotments within the planning area covering 80,164 acres of public land. The proposed alternatives allocate forage on the basis of suitable acreage; do not allow grazing at more than carrying capacity; establish seasons, frequency, and intensity of livestock use; and provide for monitoring systems. Procedures for the use of ephemeral range are also provided.

The four wilderness alternatives propose varying combinations of suitability and non-suitability recommendations for the five Wilderness Study Areas (WSAs) within the planning area. These alternatives are analyzed to show how wilderness designation or non-designation will have an impact on, and will be impacted by, proposed management of recreation, wildlife, grazing, minerals, and other resource values.

SIGNIFICANT RESOURCES AND CONFLICTS

A herd of approximately 80 to 100 Peninsular bighorn sheep inhabit the mountains and slopes around Carrizo Gorge, including parts of the In-Ko-Pah and Mt. Tule grazing allotments, and Carrizo Gorge WSA. They are a remnant population, once possessing a much larger distribution. Competition between domestic livestock and bighorn still occurs, although to a lesser degree than in the past, especially in the In-Ko-Pah allotment around water sources. The population appears to be stable.

Conflicts between grazing and recreation use exist. Vandalism and destruction of existing facilities frequently occur. Indiscriminant off-road vehicle use has damaged grazing areas in the past, although closure of many access points in McCain Valley has somewhat alleviated this problem somewhat.

The lack of systematic grazing practices in the past has resulted in damage to key riparian habitat, competition for space and water between bighorn sheep and cattle, and a range in predominantly fair to poor condition. Forage allocations in the past have been made on the basis of total acres within the allotments rather than suitable acres.

GRAZING ALTERNATIVES

Alternative 1--No Grazing. Termination of all livestock grazing on the 11 allotments is proposed. All forage will be reserved for resource values other than grazing.

Alternative 2--Intensive Use. All Management Framework Plan (MFP) Step I resource conflicts are resolved in favor of grazing. Two new allotments and 10 allotment management plans (AMPs) will be implemented. All available forage will be allocated to livestock: a total of 3,201 AUMs initially and 3,788 AUMs in 1985, when the proposed water developments and allotments have been implemented. This alternative will also protect 1.5 miles of riparian habitat.

Alternative 3--Proposed Action. This alternative represents a balanced resolution of MFP Step 1 resource conflicts. Forage will be allocated to livestock in a manner compatible with present and potential wildlife forage and habitat needs, with 2,914 AUMs allocated initially and 3,301 AUMs at full implementation to livestock. Nine AMPs are proposed. One new allotment will be established. This alternative will also protect three miles of riparian habitat, provide 8,380 acres of the In-Ko-Pah allotment solely to bighorn, and provide 25,000 acres for bighorn reintroduction.

Alternative 4--Limited Use. Conflicts between grazing and other resource values are resolved in favor of the latter. Forage allocations to livestock will be 2,745 initially and 2,992 with full implementation in 1985. Eight AMPs will be implemented. This alternative will also protect 4 miles of riparian habitat, will provide 12,140 acres of In-Ko-Pah allotment solely for bighorn, and will provide 25,000 acres for bighorn reintroduction.

Alternative 5--No Action. Current management practices will be continued. Livestock use will be maintained at 4,925 AUMs. Existing facilities will be maintained, but no new ones are proposed.

WILDERNESS ALTERNATIVES

Alternative 1--Maximize Wilderness. All five WSAs (San Ysidro, 2,131 acres; San Felipe, 5,265 acres; Sawtooth Mountains, 31,097 acres; Carrizo Gorge, 14,573 acres; and Table Mountain, 958 acres), a total of 54,024 acres, are recommended as suitable for wilderness designation. Roads will be closed and rehabilitated, and three parcels will be acquired. A special dispensation will be requested of Congress to permit the use of mechanized equipment to aid in bighorn reintroduction.

Alternative 2--No Wilderness. All five WSAs are recommended as unsuitable for wilderness designation.

Alternative 3--Proposed Action. A total of 40,086 acres are recommended as suitable and 13,938 acres as nonsuitable for wilderness designation. The San Felipe and San Ysidro WSAs are recommended as nonsuitable because they are distant from BLM offices and extremely difficult to manage, and effective control of users has been poor. Table Mountain is also recommended as nonsuitable because BLM has no legal access to the area, visual resources are not outstanding, and management is difficult. Carrizo Gorge (except for two acres necessary for overlooks) and most of the Sawtooth Mountain WSAs are both recommended as suitable. Portions of the Sawtooth Mountains (3,892 acres in the northwest and 1,737 acres in Potrero Canyon) are recommended as nonsuitable for wilderness designation because of problems of manageability.

Alternative 4--Limited Wilderness. A total of 39,383 acres are recommended as suitable and 14,461 acres as nonsuitable. Overlooks will not be established in Carrizo Gorge. An additional 703 acres of the Sawtooth Mountains around Potrero Canyon will be recommended as nonsuitable. All other recommendations will be as described for Alternative 3.

IMPACTS OF THE ALTERNATIVES

Grazing Alternative

Alternative 1 - No grazing

Termination of grazing will generally improve the ecological condition of the range, as ground cover will increase to 63%, water quality will improve, and sediment yield and surface runoff will be reduced. However the forage condition will remain static, while the production of livestock forage species declines 7% due to chaparral encroachment. Peninsular bighorn numbers will increase from 100 to 300 due to improvements in habitat, and while some areas would decline in conditions due to heavy density of chaparral overall mule deer numbers will not change significantly. As a result of the termination of grazing leases on public land four operators will lose over 10% of their total forage supply, and four will have income reductions of over 10%. Net effect of the no grazing alternative on rancher lifestyles will depend on individual operators ability to find suitable and economically feasible grazing land elsewhere.

Alternative 2 - Intensive Use

Livestock forage condition and production will improve to a greater degree under this alternative than any other. By 2001, 12,808 acres will be in poor condition; 21,047 will be in fair condition; 14,821 in good condition; and 816 in excellent condition. Production of forage species will increase to 7,317 AUMs. Sediment yields and surface runoff will decrease, as will stream bank erosion in riparian zones. Mule deer numbers will not change significantly despite improvement of chaparral habitat through prescribed burning. However, implementation of intensive grazing systems will result in a decline in Peninsular bighorn habitat condition and population trend, as numbers will decrease to 50 by 2001. Forage allocations will be reduced for eight operators and increased for three, an average reduction of 23%. However, only three operators will lose more than 10% of their total forage supply while only one will have an income reduction of over 10%.

Alternative 3 - Proposed Action

Improvements in range condition will be moderate under the proposed action while negative impacts on non-consumptive resources will be avoided. By 2001, there will be 17,209 acres in poor condition; 19,034 in fair; 10,125 in good; and 816 in excellent condition. Vegetative cover will increase to 65% resulting in reduced sediment yields. Forage production will increase to 6,217 AUMs. The condition of both deer and Peninsular bighorn habitat will improve, increasing the population of the former slightly while stabilizing that of the latter. Forage allocations will be reduced for nine operators and increased for two, for an average reduction of 33%. However, only those operators will lose over 10% of their available forage, while only one will have an income reduction of over 10%.

Alternative 4 - Limited Use

Impacts will be similar to those projected for alternatives 2 and 3, except that the condition and production of livestock forage species will improve less rapidly while wildlife (especially Peninsular bighorn), habitat and numbers improve to a greater degree. By 2001, there will be 16,173 acres in poor forage condition; 15,856 in fair condition; 12,229 in good condition; and 816 in excellent condition. There will be decreases in erosion due to an increase in vegetative cover to 55%. Forage production will increase to 6,149 AUMs. Elimination of competition between cattle and bighorn on 13,365 acres of the Canebrake and In-Ko-Pah allotments will enhance the opportunities for bighorn reintroduction and allow a moderate increase in numbers to 110. Deer will increase slightly. Cultural resources will be subject to impacts from burning and concentration at water and fence developments. Forage allocations will be reduced for nine operators and increased for two, for a total average reduction of 39%. However, only three operators will loose over 10% of their available forage while only one will have an income reduction of over 10%.

Alternative 5 - No Action

The condition of nearly all resources will decline under the continuation of present management. By 2001, 29,411 acres will be in poor condition; 10,783 acres will be in fair condition; 4,080 acres will be in good condition; and 800 acres will be in excellent condition. A decrease of vegetative cover to 30% due to overgrazing will result in declines in water quality and increases in erosion. Increased erosion will in turn adversely impact cultural resources, which will also be subject to continued impacts from trampling at livestock concentration sites. Forage production will remain essentially the same, at 3,500 AUMs. Wildlife habitat and populations will not benefit, as there will be no change in deer, and a 25% decline in bighorn numbers. No operators will lose more than 10% of either their total forage supply or their income.

Wilderness Alternatives

Alternative 1 - Maximize wilderness

The designation of a WSA as a wilderness area will establish protection of wilderness resources as that area's dominant objective. This will generally result in reduced soil erosion, increased game and hunting success, and a greater opportunity for solitude and primitive recreation. Sensitive plants and wildlife, cultural resources, and Native American values will receive added protection. Approximately 23 miles of roads and ways will be closed to off-road vehicle users. On 54,024 acres of land, options for developed recreation sites, land development, and fire and post suppression activities will be precluded. Vegetative manipulations and prescribed burning will be restricted to actions that maintain and/or improve wilderness qualities. On January 1, 1984, or the date of designation, whichever is later, the wilderness areas will be closed to mineral entry. Thereafter, only patented and patent pending claims can continue operations. Thirteen springs will not be maintained by vehicles.

Alterntive 2 - No Wilderness

54,024 acres will not become part of the National Wilderness Preservation System. The areas will be subject to actions that will adversely impact the wilderness resources (e.g., 7,396 acres are proposed for disposal). Intensive uses prohibited in a wilderness area will be allowed, however, wilderness qualities may be impaired to a degree that future designation will be precluded.

Alternative 3 - Proposed Action

40,886 acres will have the same impacts as in alternative 1 except 17 miles of roads and ways will be closed to ORV use. 13,938 acres will have the same impact as described in alternative 2.

Alternative 4 - Limited Wilderness

39,383 acres will have the same impacts as in alternative 1 except ten miles of roads and ways will be closed to ORV use, and nine springs will not be maintained by motor vehicles. 14,641 acres will have the same impacts as described in alternative 2.

Chapter 1

Grazing & Wilderness Alternatives

Chapter I
DESCRIPTION OF ALTERNATIVES

LOCATION

The Bureau of Land Management (BLM) proposes a grazing management program affecting 98,902 acres of public lands adjacent to or surrounding 157,685 acres of privately owned lands in the Eastern San Diego County (ESDC) Planning Unit, California (Map I-1).

Public lands in the study area are administered by the El Centro Resource Area Office, Riverside District, of the BLM. These lands lie adjacent to 52,980 acres of National Forest lands; 38,835 acres of Indian Reservation lands; and 21,788 acres of California State lands. (Map I-2).

PURPOSE AND NEED

The purpose of this EIS is to assess the probable impacts of each of the five grazing and the four wilderness alternatives on the public lands within the planning unit and to provide the public an opportunity to be informed of and comment on these land management proposals.

Lack of intensive management and consistent monitoring of livestock use has attributed to damage of key riparian habitat, competition for space and water between bighorn sheep and livestock, need for adjustment of existing numbers, periods of use, or mode of operation in the short term to compliment long-term management goals. Additionally, there are conflicts with recreational use and grazing allotments, and a serious problem of vandalism and damage to range improvements.

The grazing alternatives are a series of management options which are intended to protect, maintain, and improve condition of rangelands through soil and vegetative treatment programs and to regulate livestock numbers within each livestock grazing allotment.

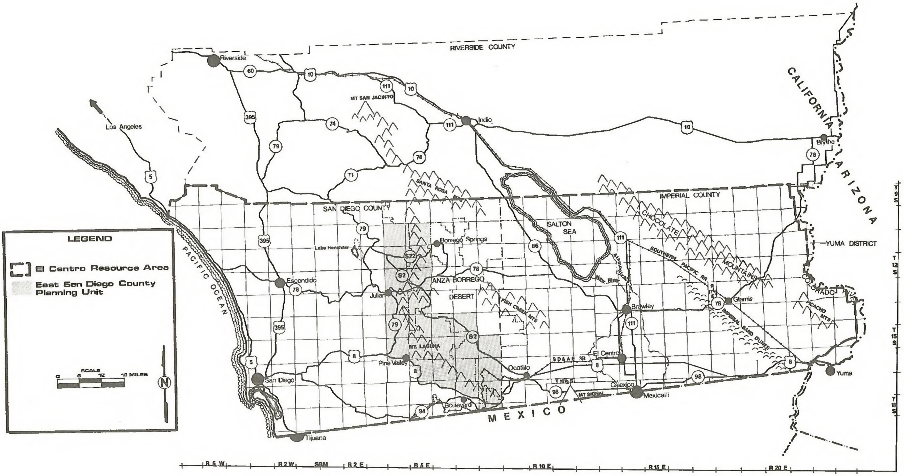
The wilderness management alternatives are a series of management options that reflect degrees of protection and use in those areas which contain wilderness values as set forth in the Wilderness Act of 1964 and the Federal Land Policy and Management Act (FLPMA) of 1976.

DESCRIPTION OF GRAZING ALTERNATIVES

Present authorized use was derived from the 1965 range survey; however, these allocations were based on total acres within each allotment instead of suitable acres. Since forage capacity was based on the later criteria, reductions are required. Suitable acreage must be within four miles of water, must be more productive than 32 acres per AUM, must be on

REGIONAL LOCATION MAP

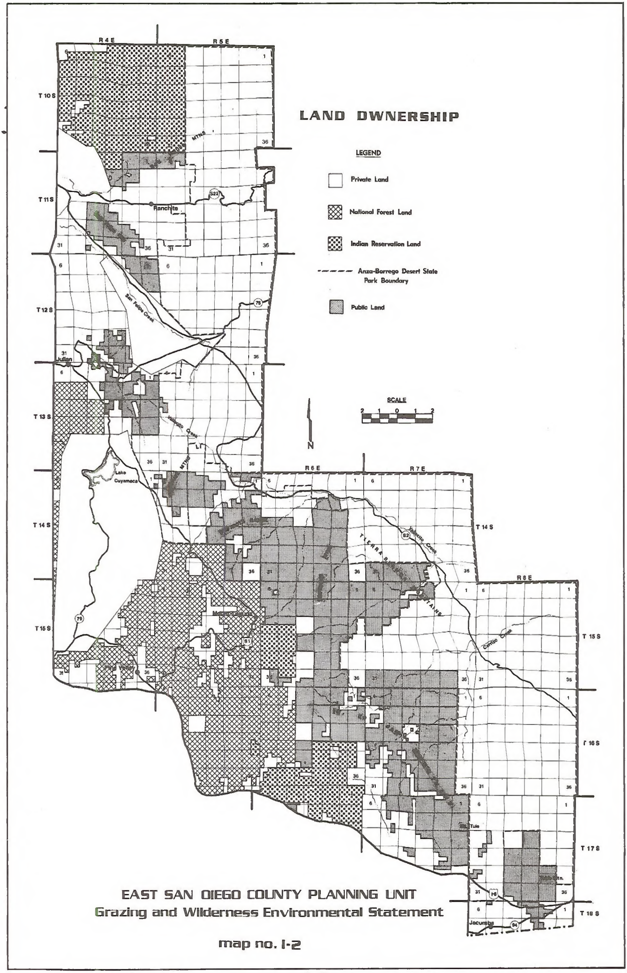
RIVERSIDE DISTRICT



EAST SAN DIEGO COUNTY PLANNING UNIT

Grazing and Wilderness Environmental Statement

map no. 1-1



EAST SAN DIEGO COUNTY PLANNING UNIT
Grazing and Wilderness Environmental Statement

map no. 1-2

less than 50 percent slope, and must have a soil surface factor (erosional state) of less than 60. Substantial reductions in use will be required for Alternatives 2, 3, and 4. These allocations are shown on tables I-2, I-5, and I-8.

The production of native vegetation, on 46 percent of the study area determined to be suitable for livestock grazing, is estimated at 3,201 animal unit months (AUMs). An additional 587 AUMs are classified as suitable upon development of water sources. Vegetation has been allocated to competing livestock and resource needs based on the objectives of each alternative and trade-offs in the Management Framework Plan (MFP) Step 1 recommendations for the planning unit.

Range treatments and facilities would be implemented over a four-year period from 1982 to 1985. A table showing implementation schedule accompanies the description of each applicable alternative.

Alternative 1 -- No Grazing

Objectives

-- Reserve available forage and resource values for uses other than livestock grazing.

-- Provide for the natural succession of vegetation.

-- Reduce soil erosion, compaction, and sediment loss to the levels found under natural conditions (anything under 3.45 tons per acre is considered natural levels).

-- Manage for vegetative production at natural levels keeping with natural ecological potential.

Description of Alternative

All livestock will be removed from public lands within the planning unit within three years of the decision. One existing allotment management plan (AMP) will be terminated. Range facilities and vegetative manipulations would not be constructed or maintained unless the need is identified for support of other BLM programs (for example, wildlife). Approximately 41 miles of boundaries with State, Federal and private lands will be fenced to prevent livestock trespass. Public lands will continue to be managed for all other multiple uses as mandated by FLPMA. Table I-1 presents forage allocations under this alternative.

Alternative 2 -- Intensive Livestock Use

Objectives

-- Implement grazing systems to achieve maximum livestock grazing use consistent with forage plant requirements.

TABLE I - 1 GRAZING SYSTEMS TABLE - ALTERNATIVE 1 - NO GRAZING

Allotment	Existing Situation			Livestock Preference & Range Class (AUM's) 2/	Season-of-use 3/	1978 Active use (AUMs) 2/	Allotments under Alternative 1		Proposed Forage Allocations Interim (1981)		Full Implementation (1985)				Proposed Grazing Syatem				Projected Future Eorage Allocation (2001) (AUMs)
	Public Land (Acres)	Other Land (Acres)	Total Eorage Capacity (AUMs) 1/				Public Land Acreage	Present total Forage Capacity 1/	Livestock AUMs 4/	% Change	Livestock 5/	% Change	Deer	Bighorn Sheep	Management Intensity	Treatment	Season of use	Range Class 7/	Total 6/
1) San Felipe	1285	135	72	234 (c) Perennial	11/1-6/9	234	1285	72			0	-100	72					PER-EPH	61
2) Cigarette Hills	120	8100	6	12 (c) Perennial	10/1-4/20	12	120	6			0	-100	6					PER-EPH	4
3) Banner Queen	4123	411	102	300 (c) Perennial	Yearlong	300	4123	102			0	-100	102					PER-EPH	80
4) Julian	40	70	2	5 (c) Perennial	Yearlong	5	40	2			0	-100	2					PER-EPH	2
5) Oriflamme	6913	10000	465	1301 (c) Perennial	Yearlong (AMP)(GS)	1301	6913	465			0	-100	465					PER-EPH	274
6) Vallecito	15213	3680	615	1286 (c) Perennial	Yearlong	1286	15213	615			0	-100	615					PER-EPH	635
7) Canebrake	8836	880	333	302 (c) Perennial	Yearlong	302	8836	333			0	-100		333				PER-EPH	354
8) In-Ko-Pah	16283	2700	568	250 (c) Perennial	Yearlong	250	16283	568			0	-100	300	268				PER-EPH	681
9) Mt. Tule	4710	1780	308	203 (c) Perennial	Yearlong (AMP)(UI)	203	4710	308			0	-100		308				PER-EPH	231
10) McCain Valley	360	1440	20	30 (c) Perennial	Yearlong	30	360	20			0	-100	20					PER-EPH	14
11) Tierra Blanca	15808	1380	902	1002 (c) Perennial	Yearlong (AMP)(Ul)	1002	15808	902			0	-100	902					PER-EPH	839
TOTAL	73691	30576	3393	4925 (c)		4925	73691	3393			0	-100	2484	909					3175

1/ Suitable and potentially suitable Animal Unit Months, include those AUMs that meet 8LM production and slope criteria.
2/ Authorized use determined from 1965 range survey.
3/ (AMP) existing Allotment Management Plan (GS) Grazing System (UL) Unimplemented AMP.
4/ No grazing will be achieved with three years of implementation. The Reduction Schedule will be agreed upon by the operator and Oistrict Manager (43 CER 4110.3-2). Livestock levels of use beginning in 1981 will have to be agreed upon.
5/ Full implementation of Alternative One. No livestock use.
6/ It is assumed that allocation of forage to wildlife will be maximized. The No Grazing Alternative will allow allocation of Total Forage Capacity to wildlife species as needed.
7/ PER:EPH Perennial Ephemeral

-- Raise carrying capacity to its highest potential and allocate forage species to livestock first.

-- Protect 1.5 miles of riparian habitat from livestock grazing by fencing in the Buck Canyon Area.

-- Improve 12,323 acres of forage from "poor" condition to "fair" condition; 400 acres of forage (an existing seeding in the Oriflamme Allotment) from "poor" to "good" condition; 12,001 acres from "fair" condition to "good" condition; and 816 acres from "good" condition to "excellent" condition.

-- Assure an upward trend on "poor" or "fair" condition lands and on "good" or "excellent" condition lands to improve or maintain present condition.

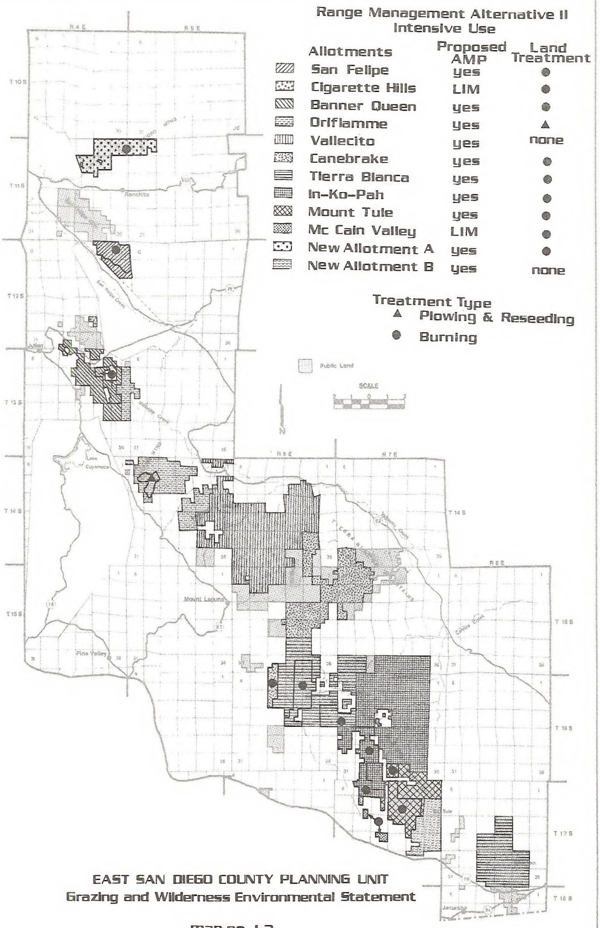
-- Reduce soil erosion on areas in the severe erosion class by increasing vegetal ground cover or limiting use.

-- Provide for maximum allowable use of ephemeral range when sufficient moisture permits.

Description of Alternative

Grazing opportunities will be maximized through intensive range facility development and implementation of AMPs. Grazing recommendations in MFP Step 1 will be favored over all other competing resource needs.

Under this alternative, seven new AMPs will be implemented (including two new proposed allotments), two AMPs will be modified, and one allotment will remain under an existing AMP. Two allotments will have less intensive management. The San Felipe Allotment will be expanded from 1,285 acres to 1,845 acres. Vallecito Allotment will be expanded by 400 acres from 15,213 acres to 15,613 acres. Two new allotments, A (2,656 acres), and B (2,937 acres) are proposed. These areas meet three of the four suitability criteria, lacking only the identification of available water sources. However, water is believed to be available. Groundwater evaluations and/or well site investigations will be completed by 1985 (when AMPs are implemented) which will identify the precise location of available waters. Map I-3 indicates the allotment boundaries. Table I-2 presents forage allocations under this alternative. Table I-3 shows range developments and vegetative treatments proposed. Table I-4 shows the schedule of implementation.



Range Management Alternative II
Intensive Use

Allotments	Proposed AMP	Land Treatment
San Felipe	yes	●
Cigarette Hills	LIM	●
Banner Queen	yes	●
Oriflamme	yes	▲
Vallecito	yes	none
Canebrake	yes	●
Tierra Blanca	yes	●
In-Ko-Pah	yes	●
Mount Tule	yes	●
Mc Cain Valley	LIM	●
New Allotment A	yes	●
New Allotment B	yes	none

Treatment Type
▲ Plowing & Reseeding
● Burning

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map no. 1-3

TABLE I-2 GRAZING SYSTEMS TABLE - ALTERNATIVE 2 - INTENSIVE USE

Allocation 1/	Existing Situation			Livestock Preference & Range Class (AUMs) 3/	Seasons-of-use 4/	1978 Active use (AUMs)	Allotments Under Alternative 2		Proposed Forage Allocations Interim (1981)		Full Implementation (1985)				Proposed Grazing Systems				Projected Future Forage Allocation (2001) (AUMs)
	Public Land (Acres)	Other Land (Acres)	Total Forage Capacity (AUMs) 2/				Public Land Use	Present Total Forage Capacity 2/	Livestock 5/ AUMs	% Change	Livestock 6/	% Change	Deer 7/	Bighorn 7/ Sheep	Management Intensity	Treatment	Season of use	Range 9/ Class	Total 10/
1) San Felipe	1285	155	72	234 (c) Perennial	11/1-6/9	234	1845	112	112	-52	112	-52	0	0	AMP	OR	11/1-6/30	PER-EPH	1616
2) Cigarette Hills	120	8110	6	12 (c) Perennial	10/1-4/20	12	120	6	6	-50	6	-50	0	0	N-AMP	LIM	11/1-3/30	PER-EPH	15
3) Banner Queen	4123	411	102	300 (c) Perennial	Yearlong	300	4123	102	102	-66	102	-66	0	0	AMP	DR	11/1-6/30	PER-EPH	500
4) Julian	40	70	2	5 (c) Perennial	Yearlong	5	40	2	2	-60	2	-60	0	0	AMP	OR	11/1-6/30	PER-EPH	5
5) Oriflamme	6913	10000	465	1301 (c) Perennial	Yearlong (AMP)(GS)	1301	6833	461	461	-64	461	-64	0	0	AMP	OR	Yearlong	PER-EPH	720
6) Vallecito	15213	3680	615	1286 (c) Perennial	Yearlong	1286	15613	634	635	-52	634	-52	0	0	AMP	OR	11/1-6/30	PER-EPH	717
7) Canebrake	8836	880	333	302 (c) Perennial	Yearlong	302	8836	333	333	+10	333	+10	0	0	AMP	DR	11/1-6/30	PER-EPH	414
8) In-Ko-Pah	16283	2700	568	250 (c) Perennial	Yearlong	250	16283	568	568	+127	568	+127	0	0	AMP	OR	11/1-6/30	PER-EPH	993
9) Mt. Tule	4710	1780	308	203 (c) Perennial	Yearlong (AMP)(UI)	203	4710	308	308	+52	308	+52	0	0	AMP	OR	11/1-6/30	PER-EPH	572
10) McCain Valley	360	1440	20	30 (c) Perennial	Yearlong	30	360	20	20	-50	20	-50	0	0	N-AMP	LIM	2/28-6/30	PER-EPH	72
11) Tierra Blanca	15808	1380	902	1002 (c) Perennial	Yearlong (AMP)(UI)	1002	15808	902	655	-35	902	-10	0	0	AMP	OR	Yearlong	PER-EPH	2483
12) Proposed New Allotment A	2656		200				2656	200	0		200	+100	0	0	AMP	OR	11/1-6/30	PER-EPH	160
13) Proposed New Allotment B	2937		140				2937	140	0		140	+100	0	0	AMP	OR	11/1-6/30	PER-EPH	520
TOTAL	79284	30576	3733	4925 (c)		4925	80164	3788	3201	-35	3788	-23	0	0					7317

1/ Banner Queen and Julian allotments will be combined.
2/ Suitable and potentially suitable Animal Unit Months, include those AUMs that meet BLM Production and slope criteria.
3/ Authorized use determined from 1965 range survey.
4/ (AMP) existing Allotment Management Plan (GS) Grazing System (UI) Unimplemented AMP.
5/ Presently suitable livestock AUMs.
6/ Total of presently suitable and potentially suitable, with water development, livestock AUMs.
7/ No Allocations of Forage to wildlife. Total Forage Capacity will be allocated to livestock.
8/ OR: Deferred Rotation. LIM: Less Intensive Management
9/ PER-EPH: Perennial-Ephemeral
10/ Projected future forage production will be allocated with a priority to livestock. However, if the total production for any one allotment cannot be utilized by the operator, then the excess forage may be allocated to wildlife as needed.

Table I-3
Range Developments Under Alternative 2

Allotment	Fencing (miles)	Spring Developments	Water Pipelines (miles)	Water Troughs	Wells	Mechanical Treatment	Burning (acres)
Oriflamme	3	1	.25	1	-	400[d]	-
Vallecito	14	-	-	-	-	-	-
Tierra Blanca	18	3	1	3	-	-	3,762
Canebrake	4	3	1	4	1	-	390
Mt. Tule	3	4	-	5	-	-	2,436
In-Ko-Pah	18	5	1.5	4	-	-	1,759
Banner Queen	7	-	-	-	-	-	950
San Felipe	6	1	1	2	-	-	740
Julian a)	-	-	-	-	-	-	25
McCain Valley b)	-	-	-	-	-	-	360
Cigarette Hills b)	-	-	-	-	-	-	74
New Allotment A c)	-	-	-	-	-	-	2,600
New Allotment B c)	-	-	-	-	-	-	-
TOTAL	73	17	4.75	19	1	400	13,096

a) Julian Allotment will be combined with Banner Queen allotment under this alternative.

b) Non-AMP areas.

c) Ground-water evaluations and/or site investigations will be conducted and needed facilities identified for AMP implementation by 1985.

d) Re-seeding of portion of the existing Oriflamme seeding presently in "poor" condition.

Table I-4
Implementation Schedule for Alternative 2

Construction Schedule	Fences (miles)	Springs	Pipeline (miles)	Water Troughs	Wells	Land Treatments (acres)	Approx. Cost ($)	Acres Disturbed
Year 1	35	4	1.25	4	-	400 (Disk or Plow) 3,762 (burning)	293,005	4,199.9
Year 2	25	12	2.5	13	1	4,585 (burning)	275,250	4,621
Year 3	13	1	1	2	-	2,075 (burning)	125,500	2,163.46
Year 4	-	-	-	-	-	2,674	106,960	2,674
TOTAL (4 year schedule)							800,715	13,658.36

Alternative 3 -- Proposed Action

Objectives

-- Allocate present and projected forage to livestock in a manner compatible with identified present and potential wildlife forage and habitat needs. This would mean providing a balance of forage allocation which demonstrates a sharing of forage between livestock and wildlife.

-- Achieve increased forage productivity over a 20-year period of 82 percent. This will also reflect a positive movement towards maximum forage potential.

-- Protect three miles of riparian habitat for the benefit of wildlife by fencing from livestock grazing: 1.5 miles in Buck Canyon; 1 mile in Pepperwood; and .5 mile in the Bow Willow area.

-- Improve deer habitat to increase deer population density from the present 1 to 3 per square mile to 10 to 15 per square mile by the year 2001 in the Tierra Blanca and In-Ko-Pah Allotments.

-- Provide 8,380 acres of bighorn sheep habitat and its carrying capacity solely to bighorn and other wildlife species within the In-Ko-Pah Allotment to maintain and increase population density.

-- Provide and sustain an additional 25,000 acres of bighorn sheep habitat for their reintroduction. This includes portions of Canebrake, Vallecito, and Oriflamme Allotments.

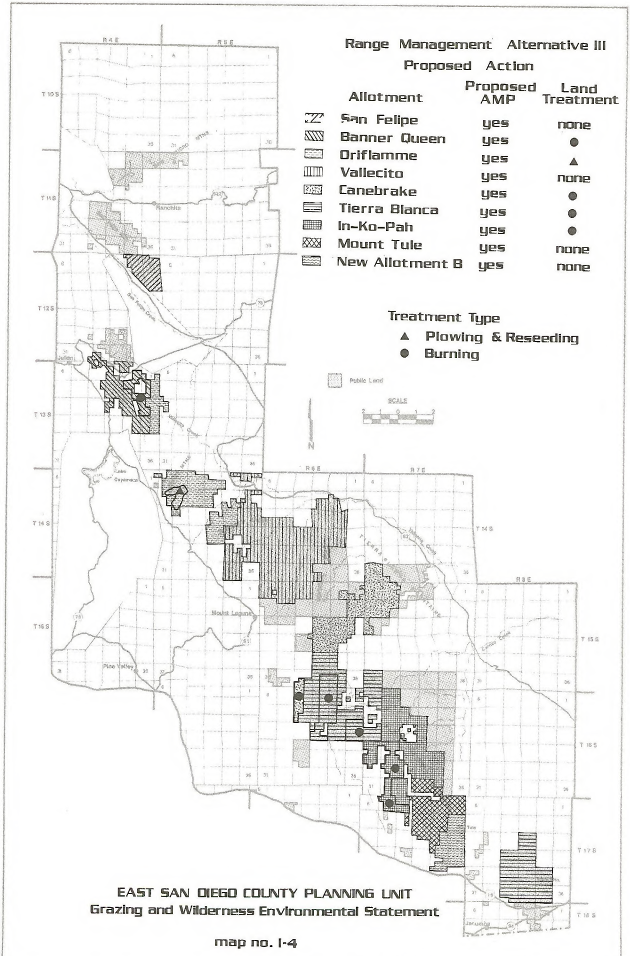
-- Improve 10,852 acres of forage from "poor" condition to "fair" condition; 400 acres of forage (an existing seeding in the Oriflamme Allotment) from "poor" to "good" condition; 9,160 acres from "fair" condition to "good" condition; and 816 acres from "good" condition to "excellent" condition.

-- To assure an upward trend on "poor" or "fair" lands and to improve or maintain present condition on "good" or "excellent" condition lands.

-- Reduce soil erosion on areas in the severe erosion class by increasing vegetal ground cover or limiting use.

Description of the Alternative

This alternative, the proposed action (MFP Step 2 recommendations), strives to balance the needs and requirements of livestock and competing resources. It is proposed to develop six new AMPs (including one on a new allotment), modify two existing AMPs, continue the management of one allotment under an existing AMP, and terminate



EAST SAN DIEGO COUNTY PLANNING UNIT
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map no. I-4

TABLE I-5 GRAZING SYSTEMS TABLE - ALTERNATIVE 3 - PROPOSED ACTION

Allotment 1/	Existing Situation			Livestock Preference & Range Class (AUMs) 3/	Season-of-use 4/	1978 Active use (AUMs)	Allotments Under Alternative 3		Proposed Forage Allocations Interim (1981)		Full Implementation (1985)				Proposed Grazing Systems				Projected Future Forage Capacity 10/ (2001) (AUMs)
	Public Land (Acres)	Other Land (Acres)	Total Forage Capacity 2/ (AUMs)				Public Land (Acreage)	Present Total Forage Capacity 2/	Livestock 5/ (AUMs)	% Change	Livestock 6/	% Change	Deer	Bighorn Sheep	Management Intensity	Treatment 8/	Season of use	Range Class 9/	Total
1) San Felipe	1285	135	72	234 (c) Perennial	11/1-6/9	234	1845	112	112	-52	112	-52	0	0	AMP	OR	11/1-6/30	PER-EPH	102
2) Cigarette Hills	120	8100	6	12 (c) Perennial	10/1-4/20	12	120	6			0	-100	6	0	No Grazing			PER-EPH	4
3) Banner Queen	4123	411	102	300 (c) Perennial	Yearlong	300	4123	102	102	-65	102	-65	0	0	AMP	OR	11/1-6/30	PER-EPH	500
4) Julian	40	70	2	5 (c) Perennial	Yearlong	5	40	2	2	-60	2	-60	0	0	AMP	OR	11/1-6/30	PER-EPH	1
5) Oriflamme	6913	10000	465	1301 (c) Perennial	Yearlong (AMP)(GS)	1301	6833	468	461	-65	461	-65	0	0	AMP	OR	Yearlong	PER-EPH	720
6) Vallecito	15213	3680	615	1286 (c) Perennial	Yearlong	1286	15613	634	619	-52	619	-52	0	15	AMP	OR	11/1-6/30	PER-EPH	717
7) Canebrake	8836	880	333	302 (c) Perennial	Yearlong	302	7611	295	295	-2	295	-2	0	7/	AMP	OR	11/1-6/30	PER-EPH	414
8) In-Ko-Pah	16283	2700	568	250 (c) Perennial	Yearlong	250	7903	427	422	+69	422	+69	5	7/	AMP	OR	11/1-6/30	PER-EPH	860
9) Mt. Tule	4710	1780	308	203 (c) Perennial	Yearlong (AMP)(UI)	203	4710	308	256	+26	256	+26	10	42	AMP	OR	11/1-6/30	PER-EPH	242
10) McCain Valley	360	1440	20	30 (c) Perennial	Yearlong	30	360	20			0	-100	20	0	No Grazing			PER-EPH	14
11) Tierra Blanca	15808	1380	902	1002 (c) Perennial	Yearlong (AMP)(UI)	1002	15808	902	645	-36	892	-11	10	0	AMP	OR	Yearlong	PER-EPH	2483
12) Proposed New Allotment 8	2937		140				2937	140	0	0	140	+100	0	0	AMP	OR	11/1-6/30	PER-EPH	160
TOTAL	76628	30576	3533	4925 (c)		4925	67903	3409	2914	-41	3301	-33	51	57					6217

1/ Banner Queen and Julian will be combined for ease of management.
2/ Suitable and potentially suitable Animal Unit Months, include those AUMs that meet BLM production and slope criteria.
3/ Authorized use determined from 1965 range survey.
4/ (AMP) existing Allotment Management Plan (GS) Grazing System (UI) Unimplemented AMP.
5/ Presently suitable livestock AUMs. Grazing will be terminated in the Cigarette Hills, and McCain Valley Allotments. The no grazing level will be achieved with three years of implementation. The reduction schedule will be agreed upon by the operator and District Manager (43 CFR 4111.3-2).
6/ Total of presently suitable and potentially suitable, with water development, livestock AUMs.
7/ No bighorn allocations were made in the Canebrake and In-Ko-Pah allotments because bighorn habitat has been removed from the allotment due to proposed boundary change.
8/ OR: Deferred Rotation.
9/ PER-EPH: Perennial/Ephemeral
10/ Baseline data on carrying capacity and wildlife forage needs collected by monitoring between 1985 and 2001 will be used to allocate forage to livestock and wildlife as appropriate at that time.

Table I-6
Range Developments Under Alternative 3

Allotment	Fencing (miles)	Spring Developments	Water Pipelines (miles)	Water Troughs	Wells	Mechanical Treatment	Burning (acres)
Oriflamme a)	3	1	.25	1	-	400[e]	-
Vallecito	14	-	-	-	-	-	-
Tierra Blanca f)	18	9	1	3	1	-	3,762
Canebrake	4	3 d)	1	4	1	-	390
Mt. Tule	3	4	-	5	-	-	-
In-Ko-Pah f)	12	1	-	1	-	-	1,759
Banner Queen	7	-	-	-	-	-	950
San Felipe	6	1	1	2	-	-	-
Julian b)	-	-	-	-	-	-	-
McCain Valley c)	-	-	-	-	-	-	-
Cigarette Hills c)	-	-	-	-	-	-	-
New Allotment B g)	-	-	-	-	-	-	-
TOTAL	67	19	3.25	16	2	400	6,861

a) This is under an AMP. The proposed action would modify the grazing system.

b) This allotment will be combined under proposed action.

c) No grazing.

d) Two springs will be developed by drilling horizontal wells following well-site investigation.

e) Re-seeding of that portion of the existing Oriflamme seeding presently in "poor" condition.

f) For Tierra Blanca, this fencing includes fencing which will exclude livestock access to the critical bighorn watering source at Sombrero Peak. Fencing in In-Ko-Pah allotment includes fencing to exclude livestock from 8,380 acres in the In-Ko-Pah Mountains near Carrizo Gorge.

g) Ground water evaluations and/or site investigations will be conducted and needed facilities identified for AMP Implementation by 1985.

Table I-7
Implementation Schedule for Alternative 3

Construction Schedule	Fences (miles)	Springs	Pipeline (miles)	Water Troughs	Wells	Land Treatments (acres)	Approx. Cost ($)	Acres Disturbed
Year 1	35	10	1.25	4	1	3,762 (burning) 400 (plowing)	297,225	4,204.2
Year 2	19	8	1	10	1	2,149 (burning)	159,760	2,175.4
Year 3	13	1	1	2	0	950 (burning)	80,500	964.5
TOTAL (3 year schedule)							537,485	7,344.1

use on two allotments. The San Felipe Allotment will be expanded from 1,285 acres to 1,845 acres. Vallecito Allotment will be enlarged by 400 acres from 15,213 acres to 15,613 acres. The Canebrake Allotment will be decreased from 8,836 acres to 7,611 acres to aid in the reintroduction of bighorn sheep. To provide protection of existing bighorn habitat, the In-Ko-Pah Allotment will be reduced from 16,283 acres to 7,903 acres. One new allotment, B (2,937 acres) will be implemented. Map I-4 indicates the allotment boundaries. Table I-5 gives the allotments and forage allocations under this alternative. Table I-6 shows range developments and vegetative treatments which are proposed. Table I-7 shows the proposed schedule of implementation.

Alternative 4 -- Limited Use

Objectives

-- Provide forage for livestock use with limitations on use based on a priority for wildlife forage allocation.

-- Achieve maximum forage production within the constraints of this alternative and provide this production for future wildlife use first, allocating remaining forage production to livestock.

-- Expand bighorn sheep habitat protection in the In-Ko-Pah allotment and increase the protected acreage to 12,140 acres, and allocate all forage within this habitat zone to bighorn sheep and other wildlife species.

-- Provide and sustain an additional 25,000 acres of bighorn sheep habitat for their reintroduction. This would include portions of three allotments (Canebrake, Vallecito and Oriflamme).

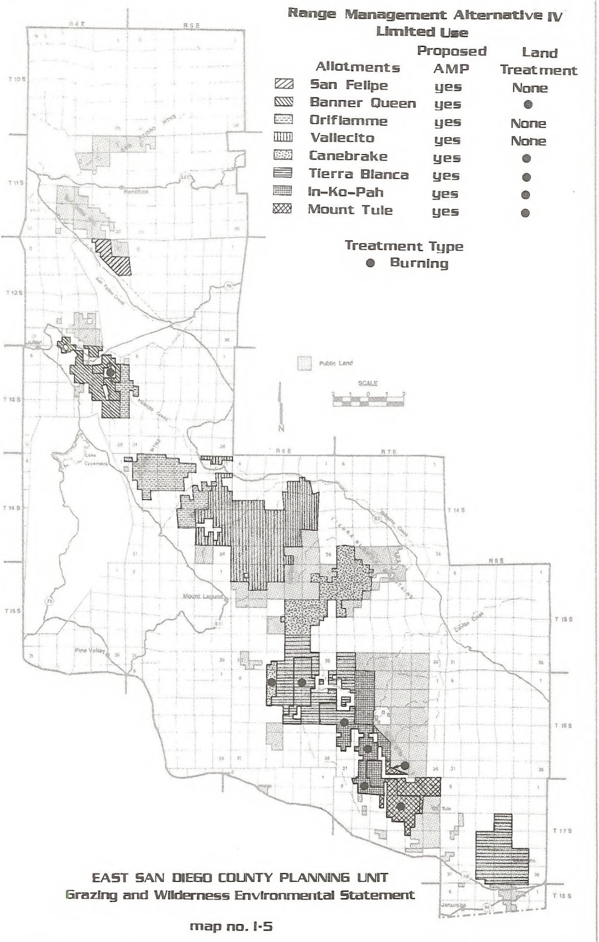
-- Protect approximately four miles of riparian habitat from livestock grazing for the benefit of wildlife. This would include those areas described for protection under Alternative 3 and in addition would add one mile in the Chariot Canyon area.

-- Improve deer habitat to increase deer population density from the present 1 to 3 deer per square mile to 10 to 15 per square mile by the year 2001 in the Tierra Blanca and In-Ko-Pah allotments.

-- Improve 11,560 acres of forage from "fair" condition to "good" condition; approximately 11,000 acres from "poor" condition to "fair" condition; and 816 acres from "good" condition to "excellent" condition.

-- Assure an upward trend on "poor" or "fair" condition lands, and to improve or maintain a static trend on "good" condition lands.

-- Reduce soil erosion in the severe erosion class where identified by resource needs other than those benefiting livestock production.



Range Management Alternative IV
Limited Use

EAST SAN DIEGO COUNTY PLANNING UNIT
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map no. I-5

TABLE 1-8 GRAZING SYSTEMS TABLE - ALTERNATIVE 4 - LIMITED USE

Allotment 1/	Existing Situation			Livestock Preference & Range Class (AUM's) 3/	Season of-use 4/	1978 Active Use (AUM's)	Allotments Under Alternative 4		Proposed Forage Allocations Interim (1981)		Full Implementation (1985)				Proposed Grazing Systems				Projected Future Forage Allocation 12/ (2001) (AUM's)
	Public Land (Acres)	Other Land (Acres)	Total Forage Capacity (AUM's) 2/				Public Land Acreage	Present Total Forage Capacity 2/	Livestock 5/ AUM's	% Change	6/ Livestock	% Change	7/ Deer	Bighorn Sheep	Management 9/ Intensity	10/ Treatment	Season of use	Range 11/ Class	Total
1) San Felipe	1285	135	72	234 (c) Perennial	11/1-6/9	234	1285	72	72	-69	72	-69			AMP	DR	11/1-6/30	PER-EPH	65
2) Cigarrette Mills	120	8100	6	12 (c) Perennial	10/1-4/20	12	120	6			0	-100	6		No-Grazing			PER-EPH	6
3) Banner Queen	4123	411	102	300 (c) Perennial	Yearlong	300	4123	102	102	-65	102	-65			AMP	DR	11/1-6/30	PER-EPH	500
4) Julian	40	70	2	5 (c) Perennial	Yearlong	5	40	2			0	-100	2		No-Grazing			PER-EPH	2
5) Oriflamme	6913	10000	465	1301 (c) Perennial	Yearlong (AMP)(GS)	1301	6833	461	461	-65	461	-65			AMP	DR	Yearlong	PER-EPH	618
6) Vallecito	15213	3680	615	1286 (c) Perennial	Yearlong	1286	15613	634	619	-52	619	-52		15	AMP	DR	11/1-6/30	PER-EPH	717
7) Canebrake	8836	880	333	302 (c) Perennial	Yearlong	302	7611	295	295	-2	295	-2		8/	AMP	DR	11/1-6/30	PER-EPH	414
8) In-Ko-Pah	16283	2700	568	250 (c) Perennial	Yearlong	250	4143	300	295	+18	295	+18	5	8/	AMP	DR	11/1-6/30	PER-EPH	758
9) Mt. Tule	4710	1780	308	203 (c) Perennial	Yearlong (AMP)(UI)	203	4710	308	256	+26	256	+26	10	42	AMP	DR	11/1-6/30	PER-EPH	572
10) McCain Valley	360	1440	20	30 (c) Perennial	Yearlong	30	360	20			0	-100	20		No-Grazing			PER-EPH	14
11) Tierra Blanca	15808	1380	902	1002 (c) Perennial	Yearlong (AMP)(UI)	1002	15808	902	645	-36	892	-11	11		AMP	DR	Yearlong	PER-EPH	2483
Total	73691	30572	3393	4925 (c)		4925	60646	3102	1745	-44	2992	-39	53	57					6149

1/ Banner Queen and Julian will be combined for ease of management.
2/ Suitable and potentially suitable Animal Unit Months, include those AUM's that meet BLM production and slope criteria.
3/ Authorized use determined from 1965 range survey.
4/ (AMP) existing Allotment Management Plan (GS) Grazing System (UI) Unimplemented AMP.
5/ Presently suitable livestock AUM's.
6/ Total of presently suitable and potentially suitable, with water development, livestock AUM's.
7/ Only In-Ko-Pah, Tierra Blanca, and Mt. Tule showed a deer demand in MFP1. The remaining AUM's were allocated for future need, as identified, because of allotment terminations.
8/ No bighorn allocations were made in the Canebrake and In-Ko-Pah allotments because bighorn habitat has been removed from the allotment due to proposed boundary change.
9/ AMP: Allotment Management Plan.
10/ DR: Deferred Rotation.
11/ PER-EPH: Perennial-Ephemeral.
12/ Baseline data on carrying capacity and wildlife forage needs collected by monitoring between 1985 and 2001 will be used to allocate forage to livestock and wildlife as appropriate at that time.

Table I-9
Range Developments Under Alternative 4

Allotment	Fencing (miles)	Spring Developments	Water Pipelines (miles)	Water Troughs	Wells	Mechanical Treatment	Burning (acres)
Oriflamme	3	1	.25	1	-	-	-
Vallecito	14	-	-	-	-	-	-
Tierra Blanca a)	18	8	1	9	1	-	3,762
Canebrake	2	2	-	3	1	-	390
Mt. Tule	3	4	-	5	-	-	2,436
In-Ko-Pah a)	12	1	-	1	-	-	1,759
Banner Queen	7	-	-	-	-	-	950
San Felipe	6	1	1	2	-	-	-
Julian b)	-	-	-	-	-	-	-
McCain Valley b)	-	-	-	-	-	-	-
Cigarette Hills b)	-	-	-	-	-	-	-
						-	
TOTAL	65	17	2.25	21	2	-	9,297

a) For Tierra Blanca, this fencing includes fencing which will exclude livestock access to the critical bighorn watering source at Sombrero Peak. Fencing in the In-Ko-Pah allotment includes fencing to exclude livestock from 12,140 acres in the In-Ko-Pah Mountains near Carrizo Gorge.

b) These allotments will be terminated.

Table I-10
Implementation Schedule for Alternative 4

Construction Schedule	Fences (miles)	Springs	Pipeline (miles)	Water Troughs	Wells	Land Treatments (acres)	Approx. Cost ($)	Acres Disturbed
Year 1	35	9	2.25	10	1	3,762 (burning)	269,905	3,805.6
Year 2	17	7	-	9	1	4,585 (burning)	242,400	4,607.8
Year 3	13	1	1	2	-	950 (burning)	80,500	964.5
TOTAL (3 year schedule)							592,805	9,377.9

Description of the Alternative

Conflicts between grazing and other resources identified by MFP Step I will be resolved in favor of those other resources. Livestock grazing will be terminated on three allotments and reduced on six others. No new allotments will be created. Eight AMPs will be implemented. The Vallecito Allotment will be enlarged by 400 acres, from 15,213 acres to 15,613 acres. The Canebrake Allotment will be decreased from 8,836 acres to 7,611 acres to aid in the reintroduction of bighorn sheep. To provide protection of existing bighorn habitat, the In-Ko-Pah Allotment will be reduced from 16,283 acres to 4,143 acres. Map I-5 details the allotment boundaries. Table I-8 presents forage allocations for this alternative. Table I-9 shows the proposed range developments and vegetative treatments. Table I-10 presents the schedule of implementation.

Alternative 5 -- No Action

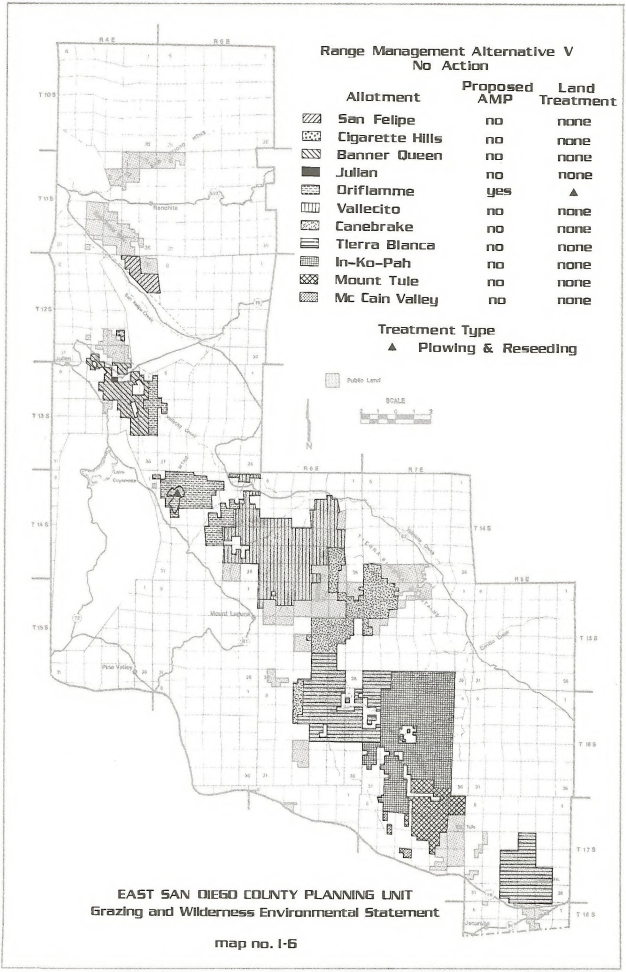
This alternative recommends the continuation of current grazing management practices. Grazing will be retained at the level of 1978 permitted use. Management of livestock would be by use supervision of existing numbers and systems. There would be no major adjustments based on other resource values. Detailed allotment planning would not occur. Allotments, allotment boundaries, periods of use, and kind of livestock would not change. No new range developments are proposed. However, maintenance of 49 existing water facilities (i.e. springs, pipelines, wells, reservoirs and check dams) would continue, to provide the best possible distribution of livestock given the current stocking rates. Vegetative treatment would be allowed on 800 acres of the Oriflamme Allotment and maintenance of 26 miles of existing fences would continue. One AMP would continue under present management. All other allotments would continue at the present stocking level of 4,925 AUMs. Map I-6 details the allotment boundaries. Table I-11 details the allocations by allotment. No vegetation would be allocated to wildlife.

Range Systems And Developments

Intensive Management

Development of AMPs and grazing systems would be based on the Eastern San Diego County MFP. The MFP identifies grazing management restrictions to improve or maintain range condition and encourage adherence to the following MFP objectives in preparation of specific grazing management proposals:

- Grazing would be restricted to livestock carrying capacity.
- Proper periods of use would be established to meet phenological requirements.



Range Management Alternative V
No Action

	Allotment	Proposed AMP	Land Treatment
▨	San Felipe	no	none
▨	Cigarette Hills	no	none
▨	Banner Queen	no	none
■	Julian	no	none
▨	Oriflamme	yes	▲
▥	Vallecito	no	none
▨	Canebrake	no	none
▤	Tierra Blanca	no	none
▦	In-Ko-Pah	no	none
▩	Mount Tule	no	none
▨	Mc Cain Valley	no	none

Treatment Type

▲ Plowing & Reseeding

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map no. I-6

TABLE I-11 GRAZING SYSTEMS TABLE - ALTERNATIVE 5 - NO ACTION

Allotment	Existing Situation			Livestock Preference & Range Class (AUMs) 2/	Season-of-use 3/	1978 Active Use (AUMs)	Projected Future Forage Allocation (2001) (AUMs) 4/
	Public Land (Acres)	Other Land (Acres)	Total Forage Capacity (AUMs) 1/				Total
1) San Felipe	1285	135	72	234 (c) Perennial	11/1-6/9	234	61
2) Cigarette Hills	120	8100	6	12 (c) Perennial	10/1-4/20	12	4
3) Banner Queen	4123	411	102	300 (c) Perennial	Yearlong	300	95
4) Julian	40	70	2	5 (c) Perennial	Yearlong	5	2
5) Oriflamme	6913	10000	465	1301 (c) Perennial	Yearlong (AMP)(GS)	1301	712
6) Vallecito	15213	3680	615	1286 (c) Perennial	Yearlong	1286	604
7) Canebrake	8836	880	333	302 (c) Perennial	Yearlong	302	326
8) In-Ko-Pah	16285	2700	568	250 (c) Perennial	Yearlong	250	681
9) Mt. Tule	4710	1780	308	203 (c) Perennial	Yearlong (AMP)(UI)	203	231
10) McCain Valley	360	1440	20	30 (c) Perennial	Yearlong	30	14
11) Tierra Blanca	15808	1380	902	1002 (c) Perennial	Yearlong (AMP)(UI)	1002	770
TOTAL	73691	30576	3393	4925 (c)		4925	3500

1/ Suitable and potentially suitable Animal Unit Months, include those AUMs that meet BLM production and slope criteria.
2/ Authorized use determined from 1965 range survey.
3/ (AMP) existing Allotment Management Plan (GS) Grazing System (UI) Unimplemented AMP.
4/ Projected available forage subject to change due to probable but presently unplanned prescribed burning projects.

(1) Any given area may not be grazed more than one spring growing season during a two-year period (March 1 to June 30)

(2) Any given area may not be grazed more than one summer during a two-year period (July 1 to October 31).

-- Utilization of key species will be limited to an average of 50 percent of current year's growth.

The deferred rotation system will fulfill these requirements. It would provide winter-spring use of an allotment that has two or more pastures. One pasture would be rested during the spring. This rest period would be rotated among pastures. Each alternative's forage allocation table identifies the allotment where deferred rotation is proposed.

For any one pasture, if the 50 percent utilization levels are reached prior to the end of the period of use, livestock will be removed from the pasture. If 50 percent utilization has not occurred by the end of the period of use, the operator would have the option to delay his movement.

The deferred rotation system was selected for the following reasons:

(1) Small allotment sizes and climatic features preclude more intensive systems. Rainfall is so unpredictable (and subject to droughts) that complex systems such as rest-rotation have not been successful in this area. The summers are extremely hot, leaving very little available forage. Rest-rotation systems have been applied to portions of the planning area intermittently since 1969. Since that time, these climatic factors have, in most years, forced the use of the rest pasture, interrupting the system. The deferred system would provide flexibility in movement of livestock from pasture to pasture based on rainfall and temperature.

(2) This system is most compatible with present rancher operations.

(3) The system would allow for maintenance of plant vigor, reproduction, and establishment.

Table I-12 illustrates the yearlong and winter/spring deferred rotation systems proposed for the EIS area.

Less Intensive Management

Less intensive management is proposed in allotments which are unsuitable for implementation of grazing treatments. Only livestock numbers, class, and grazing season will be regulated. The operator will be responsible for achieving resource objectives and developing specific grazing management techniques. Less intensive management will be proposed when one or more of the following conditions occur:

TABLE I-12
GRAZING SYSTEM TREATMENT SCHEDULE
DEFERRED ROTATION SYSTEMS

Two-Pasture Deferred Rotation
Winter-Spring

Grazing Cycle Year	Pastures	
	A	B
1	Graze Winter Nov-Feb	Graze Spring Mar-June
2	Graze Spring Mar-June	Graze Winter Nov-Feb

Two-Pasture Deferred Rotation
One-Pasture Winter Grazing
Yearlong

Grazing Cycle Year	Pastures		
	A	B	C
1	Graze Spring Mar-June	Graze Summer July-Oct	Graze Winter Nov-Feb
2	Graze Summer July-Oct	Graze Spring Mar-June	Graze Winter Nov-Feb

(1) The allotment provides less than 20 AUMs of forage.

(2) The allotment is composed of small (less than 300 acres), scattered parcels of public land.

Priority of Implementation

Proposed AMPs will be developed and implemented in accordance with wilderness Interim Management Policy guidelines during a four-year period as shown in Tables 1-4, 1-7, and 1-10. The criteria used in setting up AMP priorities are as follows:

(a) Range condition

(b) Conflicts with wildlife

(c) Potential for improvement, through land treatment

Implementation of range improvements are listed in priority order as follows:

(a) Adjust to present carrying capacity within three years after the filing of the final ES. The manner in which reductions or increases are taken can be worked out with the permittees and can be phased in over the three-year period, with the first adjustment by March, 1982.

(b) Install monitoring systems

(c) Water developments

(d) Fences

(e) Land treatments

Ephemeral Forage Use

During years of favorable climatic conditions allotments can produce good ephemeral (annual) forage that can be grazed by livestock. All allotments would qualify for additional ephemeral use authorizations in years of favorable annual production, if applied for. Before issuance of supplemental licenses, BLM would evaluate each application and conduct an environmental assessment record (EAR) to consider resource values such as soil moisture, plant vigor, density, etc., to determine whether conditions merit additional licensed use.

Production plots will be used to determine ephemeral (annual) forage production recorded in pounds per acre. Photographs of the various production levels will be compared along with other data to estimate production. This will be done annually to determine turnout dates and to insure that use levels do not exceed limits specified in the final management decisions. Production must be at least 200 pounds per acre (dry forage weight) to issue use permits.

Under ephemeral leasing each AMP will provide for flexibility in livestock numbers and movement dates. Utilization will never exceed 50 percent in any pasture. Movement dates may fluctuate between 10-14 days before or after scheduled dates. Allowance for livestock numbers will be based on climatic and range conditions. Because this area is subject to wide variations in precipitation, stocking rates and use periods must be flexible to allow for any adjustments in stocking rates to meet management objectives. Rates and periods of use may be increased or decreased based on range condition and ephemeral production levels.

Range Developments

Springs: Each spring development would disturb about a half acre. Free-flowing water would be provided for wildlife and to insure that the meadow would not dry up. Excess water would be piped to a trough. Overflow water would be piped back to the original drainage course. The spring and meadow complex would be fenced.

Water Troughs: All troughs would include a ramp, so small birds and mammals can escape from the trough. Construction would disturb 0.2 acre per trough.

Wells: Well construction would consist of drilling a 6-inch diameter hole to an aquifer. A concrete pad would be poured on the surface to support a livestock watering trough. Wells providing water for wildlife would remain operable all year by windmills and, where appropriate, pumps. Well construction would disturb an average of one acre per well site.

Fences: All fences would be constructed according to BLM Manual specifications for bighorn sheep and deer. All pasture fences would be 3-strand. Protective fences around pasture springs, reservoirs, and critical wildlife habitat excluded from grazing would be 4-strand. Approximately one acre per mile would be disturbed by fence construction.

Plowing and Seeding: Approximately 400 acres of an existing seeding project will be plowed and reseeded under Alternatives 2 and 3. Existing vegetation will be plowed with a brushland plow, a heavy-duty multiple disk plow, which will be pulled through the soil, destroying 90 to 95 percent of the shrub cover and most of the herbaceous cover as well. The plowed areas then will be artificially seeded with wheatgrass using a rangeland drill. The area then will be rested for two growing seasons to allow seedling establishment.

Prescribed Burning: Prescribed burning in select areas will be planned with specific goals and objectives to assure minimum damage to desirable plant species and soil. Prescriptions will be tailored to control undesirable shrub species such as chamise and sumac where dense and impenetrable growth occurs. Burning will be scheduled during appropriate seasons depending on size of area, management objectives, climatic factors, and site-specific environmental impacts. Burning will be scheduled with the concurrence of the local air pollution control officer on designated burn days to minimize impacts on air quality.

Implementation of Range Developments

Range developments and vegetative manipulations have been identified for support in developing AMPs. Standard operating procedures for implementation of the proposed range developments will include the following:

a. Developments, when possible, will be implemented after designing AMPs.

b. Environmental Assessments will be completed before the start of any project.

c. Site-specific endangered species inventories will be completed before any project is implemented.

d. Areas of land treatments will be rested for at least two growing seasons.

e. Before construction of range developments and vegetative manipulations, sites will be inventoried and evaluated, appropriate mitigation will be carried out, and sites which qualify for the National Register will be avoided.

f. Construction of fences in wildlife use areas will meet BLM specifications to permit the movement of identified wildlife.

g. Each proposed land treatment will have site-specific soils inventories to identify the potential for success upon implementation of the land treatment.

h. Livestock watering developments will be available for wildlife needs, as identified.

i. Spring developments generally will be fenced to prevent trampling.

j. All disturbed areas will be reseeded with a mixture of native and/or introduced species to provide ground cover on disturbed sites.

k. Before grazing authorizations are finalized, areas which were not sampled for threatened and endangered plant species will be inventoried prior to finalizing grazing authorizations.

Monitoring Programs

Implementation of Alternatives 2, 3, or 4 will require monitoring systems to evaluate the proposed management of each alternative. The studies will monitor utilization, condition and trend, actual use, precipitation, and ephemeral production. These studies will determine the effectiveness of the proposed management and provide data for making adjustments if needed. Adjustments could include changes in season of use, livestock numbers, and grazing systems. Changes in the grazing system may include extensions or reductions in periods of use described in each alternative, based on climatic variations, because in years of favorable rainfall, ephemeral forage production can be good, which would provide flexibility in the rotation of pastures. These monitoring components are described as follows:

(a) Trend: Trend studies will be done according to procedures in the BLM Manual 4412.22c. Pastures will be stratified. (Areas having similar characteristics, i.e., similar in grazing use, vegetation, soils or topography.) In areas of broad, generally flat or rolling hills with uniform vegetation, climate and soil, the entire allotment may be one stratum requiring one key area. These will be at least a two plot frame for each stratum.

These studies will be actual field measurements of vegetative cover and composition, utilization and animal condition, as well as measurements of soil erosion condition. The objectives of each alternative call for manipulating the progression of vegetation to a good forage condition. The condition and trend studies will determine the degree of objective achievement.

(b) Utilization: During and after grazing of each pasture, utilization of forage will be measured. This will be done through the key forage plant method described in BLM Manual 4412.22B. These studies will aid in determining whether stocking levels are providing proper use and what adjustments are needed, if any. These studies will also provide a time schedule for season pasture use.

(c) Precipitation: Rain gauges will provide allotment on-site measurements of rainfall to aid in interpretation of production variations according to climatic changes.

(d) Actual use: Operators will file actual use reports showing how many and how long cattle grazed a particular pasture. This will provide accurate information on levels or use, by cattle. This will provide a comparison with utilization, and condition and trend data. This data will provide for determination of grazing fees, trespasses, and needed adjustments.

Administration

Term permits will be issued to each operator specifying the season of use and number and kind of livestock. Use on the allotment will be supervised throughout the grazing year.

Operators of allotments under less intensive management who want to change the grazing outlined in their license will also need prior BLM approval. Trespass actions will be initiated on any allotment grazed outside the limits described in the AMP. The BLM will eliminate the trespass and retrieve payment from those responsible for damage and the consumption of forage.

DESCRIPTION OF WILDERNESS ALTERNATIVES

Suitability Criteria

The BLM identified wilderness study areas (WSAs) in the Eastern San Diego County Planning Unit during the California statewide Wilderness Inventory. The inventory process and the WSAs are described in Wilderness: Final Intensive Inventory, Public Lands Administered by BLM California Outside the California Desert Conservation Area (1979). Each WSA was evaluated within the MFP as part of the overall planning for the unit. The following five WSAs were identified:

San Ysidro Mountains	2,131 acres
San Felipe Hills	5,265 acres
Sawtooth Mountains[1]	31,097 acres
Carrizo Gorge	14,573 acres
Table Mountain	958 acres

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[1] Wilderness Study Areas CA-060-024-A, B, C are treated as one WSA throughout the EIS, named the Sawtooth Mountains WSA.

Each WSA was described and analyzed for the resources it contains. Inventories were conducted to provide a data base for each of the following resource factors: climate and air quality, water resources, soils, minerals, topography, vegetation/sensitive plant species, land use/grazing, wildlife/sensitive animal species, cultural resources/ Native American Concerns, recreation, visual resources, and wilderness resources. Wilderness resources include size of an area, natural conditions, opportunities for solitude or primitive and unconfined types of recreation, and analysis of ramifications of suitability recommendations on these resource values.

The next step in the process was to develop alternative options for managing the WSAs. Each alternative has different objectives. For example, Alternative 1, Maximize Wilderness (MFP Limited Use Alternative) places primary priority on preservation and secondary emphasis on other uses, whereas the objectives for Alternative 2, No Wilderness (MFP Intensive Use Alternative) place primary emphasis on other multiple uses and development.

Each alternative was analyzed to determine what would be the best use of the resources within each WSA (that is, suitability determination), using a multiple use planning approach. This was the basis for developing Alternative 3, Proposed Action (MFP Preferred Alternative). The criteria for recommending an area as suitable included the following:

-- Demand. How significant is current and projected demand or use at local, regional, and national levels?

-- Public Opinion. What are the feelings of the general public, special interests, and local governments relative to the viable alternatives?

-- Substitutes. Can demand be satisfied by alternative uses or locations?

-- Impacts/Conflicting Resources. What kinds of adverse impacts (physical, biological, economic, social, etc.) can be anticipated? How effectively could they be mitigated? What would be the anticipated beneficial impacts?

-- Rehabilitation. Is rehabilitation feasible?

-- Future Options. What effect would the decision and use have upon future planning options and decision making? What options would be closed?

-- Supply. What is the relative abundance or scarcity of the resource?

-- Condition and Trend. What are the condition and trend of the resource: good, poor, excellent, stable, improving, declining?

-- Uniqueness. Is the resource one of a kind?

-- Diversity. What other resource values are available within the same area?

-- Sensitivity. What types of impacts and intensities of impacts can the resources withstand and remain in stable or improving condition?

-- Law, Regulation and Policy. What are the constraints and guidance that will shape the decision?

-- Manageability. What problems would occur in managing for wilderness? How can management problems be reduced? Is wilderness management feasible?

-- Economics. Would management for the wilderness cost more than the benefits to be derived?

-- Land Ownership. Are adjacent land management agencies proposing wilderness adjacent to the Bureau's WSAs? Is the public land in a logical configuration and of sufficient size that management is practical?

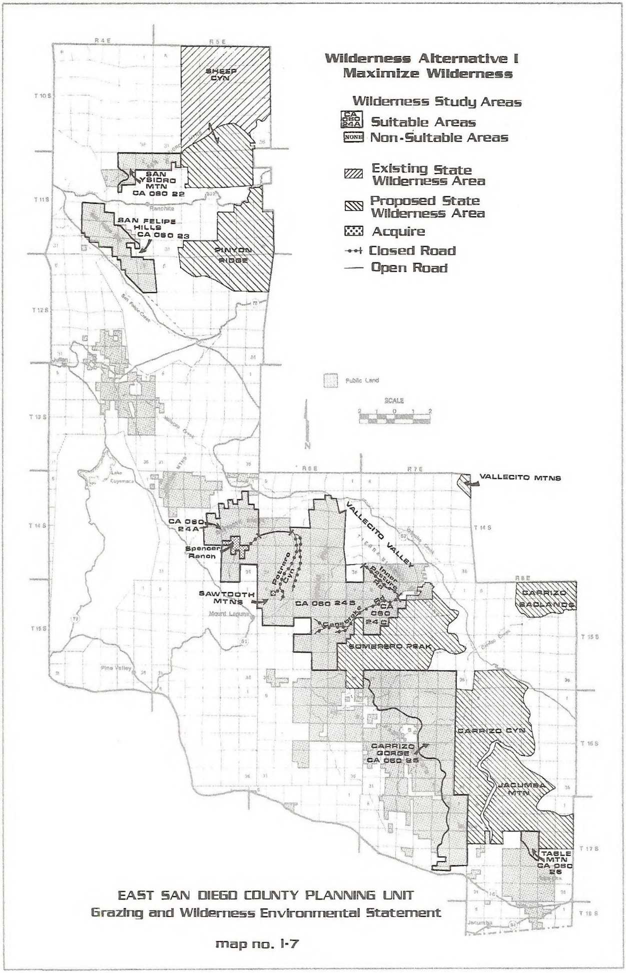
To date, the process for recommending an area as suitable has occurred in three phases. Phase 1 consisted of determining issues that should be addressed in the plan. Issues were identified both internally and through a special meeting of interested citizens representing a broad spectrum of resource interest. Wilderness suitability was one of the issues identified for resolution through the planning process. Phase 2 consisted of recommending specific uses of particular tracts of land without considering resource conflicts. This was done by BLM staff specialists in the El Centro Resource Area. To insure that all interests were considered, these resource specialists met with various governmental agencies and representatives of user groups. The staff presented their particular resource "single use" recommendation for review. Phase 3 consisted of an internal review by an interdisciplinary team to identify and resolve conflicts and mitigate impacts. Additionally, three separate public workshops were conducted to present the preferred alternative (proposed land-use decisions) and receive suggested changes. This alternative became the preferred alternative in this EIS.

DESCRIPTION OF WILDERNESS ALTERNATIVES

Alternative 1 -- Maximize Wilderness

Objectives

The objectives for San Ysidro Mountain, San Felipe Hills, the Sawtooth Mountains, Carrizo Gorge, and Table Mountain WSAs are:



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map no. I-7

-- Maximize the acreage of wilderness administered by BLM in the ESDC Planning Unit by recommending all wilderness study acreage as suitable for designation as wilderness.

-- Maintain the quality of the watersheds and the visual resources.

-- Protect sensitive plant habitats.

Additional objectives for Carrizo Gorge and the Sawtooth Mountains are:

-- Protect the habitat of bighorn sheep, raptors, and magic geckos.

-- Protect archaeological and Native American Heritage values.

Description of Alternative

Alternative 1 recommends a total of 54,024 acres of wilderness, a combination of all the acreages in:

San Ysidro Mountain	2,131 acres
San Felipe Hills	5,265 acres
Sawtooth Mountains	31,097 acres
Carrizo Gorge	14,573 acres
Table Mountain	958 acres

Roads into each wilderness area will be closed and rehabilitation will be attempted. In addition, the following acquisitions are proposed in the Sawtooth Mountains:

(1) A 40-acre parcel in Potrero Canyon.

(2) The Spencer Ranch in Storm Canyon (900 acres).

(3) Privately owned section 36 in Inner Pasture (640 acres).

A specific dispensation will be requested from Congress to permit the use of mechanzed equipment in the Sawtooth Mountains to develop water sources needed for successful reintroduction of Peninsular bighorn sheep and to transport sheep into the area.

Alternative 2 -- No Wilderness

Objectives

San Ysidro Mountain, San Felipe Hills, Sawtooth Mountains, Carrizo Gorge, and Table Mountain WSAs will be managed for utilization of all resources, including those not compatible with wilderness designation.

Description of Alternative

Alternative 2 recommends a total of 54,074 acres be designated as nonsuitable for wilderness designation. This is a combination of all the acreages in San Ysidro Mountain, San Felipe Hills, Sawtooth Mountains, Carrizo Gorge, and Table Mountain. No area is recommended as suitable for wilderness designation.

Alternative 3 -- Proposed Action

Objectives

The objective for the Sawtooth Mountains and Carrizo Gorge WSAs are:

-- Provide a high-quality wilderness experience within the planning area.

-- Maintain the quality of watersheds and soil stability.

-- Protect visual resources.

-- Protect sensitive plant and animal habitat.

-- Protect, indirectly, archaeological and Native American values.

An additional objective for the Carrizo Gorge WSA is to protect bighorn sheep habitat to maintain the existing herd.

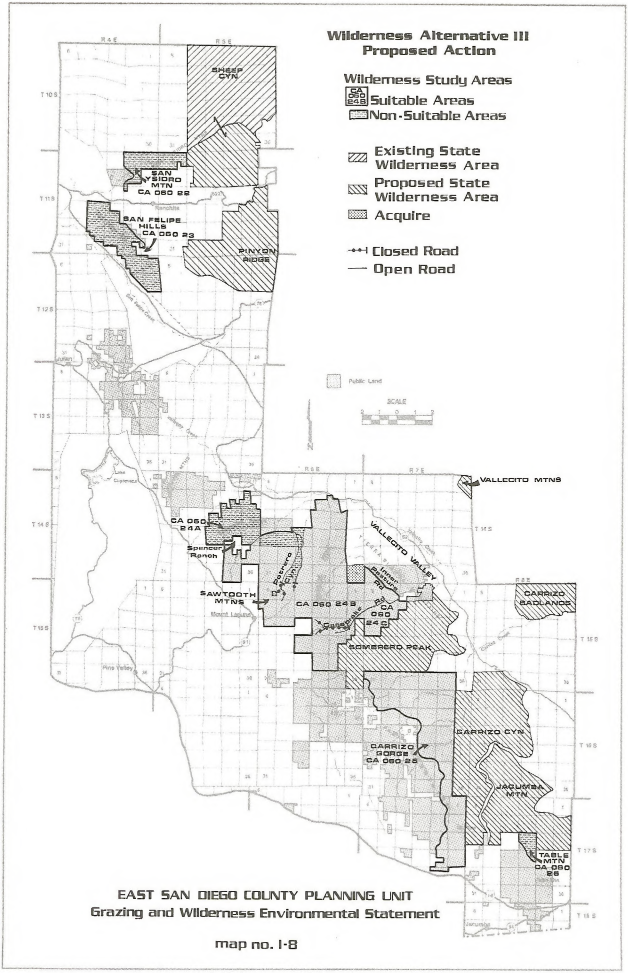
An additional objective for the Sawtooth Mountains WSA is to protect potential bighorn sheep habitat to provide for future reintroduction of bighorn.

An additional objective for the San Ysidro Mountain, San Felipe Hills, Table Mountain, and non-suitable portions of the Sawtooth Mountains WSAs is to manage for utilization of all resources, including those not compatible with wilderness designation.

Description of Alternative

Alternative 3 recommends that 40,086 acres be designated suitable and 13,398 acres be designated non-suitable for wilderness. This alternative recommends that all of the acreage within San Ysidro Mountain and San Felipe Hills WSAs be designated non-suitable.

San Ysidro is very narrow and cannot be effectively managed to provide an outstanding opportunity for solitude or primitive recreation. San Felipe is bisected by old firebreaks and rehabilitation may not be effective. The WSAs visual resources are poor, classified as VRM Class IV. Both areas are distant from BLM offices and would be difficult to manage as wilderness. Effective control of users in these areas has been poor in the past.



Wilderness Alternative III
Proposed Action

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map no. I-8

The northwestern portion of the Sawtooth Mountains (WSA-CA-060-024-A) (3,892 ac.) is recommended as non-suitable for designation as wilderness. Under this alternative, acquisition of the Spencer Ranch is not considered as possible. The road to the Spencer Ranch must remain open for access. The road and the Spencer Ranch separate this isolated ridge from the rest of the Sawtooth Mountains. As a narrow parcel of land, it would be extremely difficult to protect wilderness resources. The Spencer and Campbell Ranches are the centers for grazing and vehicle use of the area.

Although grazing and associated use of mechanical equipment are legally compatible with wilderness designation, the wilderness experience of solitude would be strongly impaired and would further compromise management of the area.

Sections 19, 20, and 21 (T. 14 S., R. 6 E., SBM), are also recommended non-suitable for designation. Wilderness management would be enhanced by placing the wilderness boundary along survey lines with proposed grazing fences as visible boundary lines. Sightings of other visitor users would be reduced, thereby enhancing solitude experiences. Because of relatively flat topography, non-suitability designation would reduce enforcement and conflicts between wilderness users and off-road vehicle users.

A third area recommended as non-suitable for wilderness designation is Potrero Canyon, where two existing roads are separated, at most, by three-quarters of a mile. It would be impossible to manage for or provide a wilderness experience in this narrow strip. South of Township 14, where the roads diverge, the roads would be closed allowing part of the Potrero Valley floor to be included as wilderness.

The proposed alternative recommends the remainder of the Sawtooth Mountains (25,515 ac.) as suitable for wilderness designation (Map I-8). Acquisition of a 40-acre parcel in Potrero Canyon and the privately owned Section 36 in Inner Pasture is proposed. The road in Inner Pasture would remain open to provide access to Anza Borrego Desert State Park. The Canebrake Road will also remain open to maintain a windmill in Section 14.

As described in Alternative 1, a special dispensation will be requested from Congress to allow the use of mechanized equipment for development of water sources for the reintroduction of Peninsular bighorn sheep.

All of Carrizo Gorge (14,571 ac.) is recommended as suitable for wilderness designation except for approximately two acres to be used for developing unique overlooks of the area (Map I-8).

All of Table Mountain (958 ac.) is recommended as non-suitable because the area is unmanageable as wilderness. Presently, the BLM does not have legal access to the WSA. The visual resources are not outstanding in relation to adjacent lands in the State of California's proposed Jacumba Mountains Wilderness Area. Even with legal access, the small size of the area would make it difficult to manage for a quality wilderness experience. Experience at Joshua Tree National Monument (Colville and Anderson, pers. comm., 1979) has shown that physical barriers are required to keep off-road vehicles from using established wilderness areas.

Alternative 4 -- Limited Wilderness

Objectives

The Sawtooth Mountains and Carrizo Gorge WSAs share the following primary objectives:

-- Provide a quality wilderness experience.

-- Provide for ease of WSA management.

-- Maintain the quality of watersheds and soil stability.

-- Protect visual resources.

-- Protect sensitive plant and animal habitat.

-- Protect archaeological and Native American values.

An additional objective for the Carrizo Gorge WSA is to protect bighorn sheep habitat to maintain the existing herd.

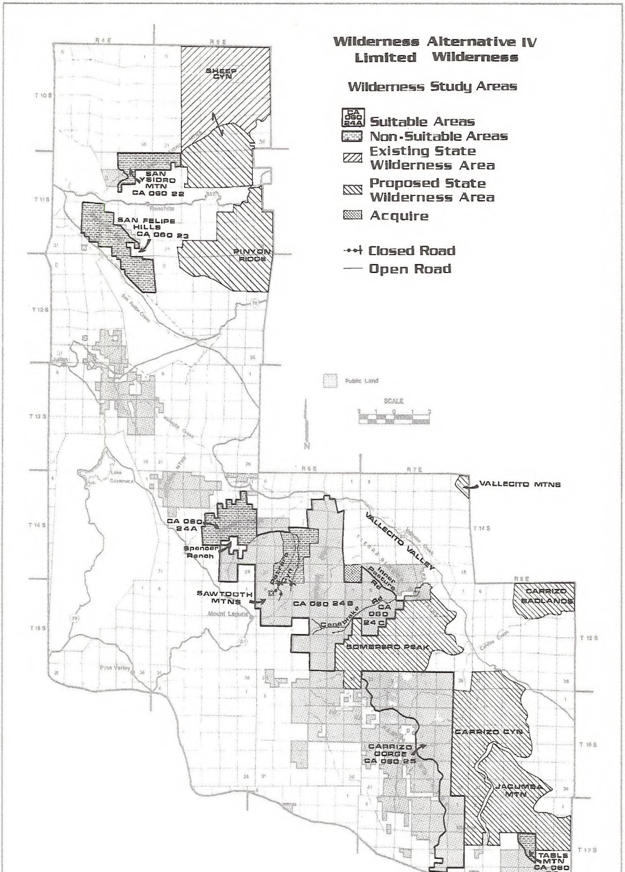
An additional objective for the Sawtooth Mountains WSA is to protect potential bighorn sheep habitat to provide for future reintroduction of bighorn.

An additional objective for the San Ysidro Mountain, San Felipe Hills, Table Mountain, and non-suitable portions of the Sawtooth Mountains WSA is to manage for utilization of all resources, including those not compatible with wilderness designation.

Description of Alternative

Alternative 4 recommends that 39,383 acres be designated suitable and 14,641 acres be designated non-suitable for wilderness. This alternative recommends that San Ysidro Mountain, San Felipe Hills, and the northwestern portion of the Sawtooth Mountains be designated as nonsuitable for wilderness. See Alternative 3 for the rationale for the recommendation.

In the Sawtooth Mountains, all of sections 21 and 32 and portions of Sections 20, 28, 29, and 33 in T. 14 S., R. 6 E., are recommended as non-suitable for wilderness designation. Included are two roads in



Wilderness Alternative IV
Limited Wilderness

EAST SAN DIEGO COUNTY PLANNING UNIT
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map no. I-9

Potrero Canyon. The narrow strip between the roads is unmanageable for wilderness experience. Legal descriptions based upon aliquot parts have been used to describe the boundaries of this area. The two roads would be closed south of Township 14 where the roads diverge. The upper portion of the Potrero Valley floor would be included within wilderness.

Alternative 4 recommends the remainder of the Sawtooth Mountains as suitable for wilderness designation (Map I-9). Acquisitions would be identical to those in the proposed action. The road in Inner Pasture would remain open to provide access to Anza Borrego Desert State Park. All the roads in Canebrake would remain open for apiary and grazing uses.

All of Table Mountain (958 acres) would be designated non-suitable for wilderness for the same reasons identified in Alternative 3.

Implications of Wilderness Designations

Section 306(a) of FLPMA directs the BLM to review roadless areas for wilderness qualities. Congress reserved the right to designate wilderness areas. Following this designation, BLM will administer wilderness areas utilizing the same provisions of the Wilderness Act of 1964 which apply to National Forest wilderness areas.

The Wilderness Act of 1964 states that wilderness designation does not conflict with the Multiple-Use-Sustained-Yield Act of 1960. The 1964 Act states that the use of motorized vehicles and equipment, and the landing of aircraft; temporary or permanent roads, structures, installations, and commercial enterprises are all prohibited within wilderness areas. Special provisions provide for the control of fires, insects, and diseases. The Mining Law of 1872 is amended to allow mineral entry and development in designated wilderness areas until midnight, December 31, 1983. After that date, only patented and patent-pending claims can continue operations. Following wilderness designation, subject to valid existing rights, all patents in wilderness areas shall convey title to the mineral deposits within the claim, "...but each such patent shall reserve to the United States all title in or to the surface of the lands and products thereof, and no use of the surface of the claim or the resources therefrom not reasonably required for carrying on mining or prospecting shall be allowed except as otherwise expressly provided in..." the Wilderness Act.

The Federal Land Policy and Management Act (FLPMA), the Wilderness Act, Department of the Interior Solicitor's Opinions, and Federal Court decisions preserve the right of access for mining claims and to private and State-owned lands that are completely surrounded by public lands within a wilderness area. In these cases, roads can be constructed and maintained within the wilderness. Public land outside the wilderness can be exchanged for inholdings surrounded by designated wilderness. However, wilderness designated lands cannot be sold or exchanged. They can be transferred to other Federal agencies as long as they are maintained in the National Wilderness Preservation System (NWPS). With these exceptions, no other rights-of-way, disposals, or alteration of wilderness boundaries can occur without Congressional authorization.

Livestock grazing existing prior to wilderness designation is permitted to continue under the Wilderness Act. By law, grazing, like mining, is compatible with wilderness. Congress has further specified that certain uses, such as the use of motorized equipment for grazing operations, are permissible within wilderness areas (House of Representatives Report #96-617). In the enabling legislation of some wilderness areas, Congress has specifically permitted activities normally precluded by wilderness designation. However, FLPMA and the Wilderness Act together prohibit the establishment of new grazing uses. The proposed grazing allotments (see Grazing Alternatives 2 and 3) must be established prior to wilderness designation to qualify as an existing use. Otherwise, the allotments could not be established without an Act of Congress.

The predominant interpretation of the Wilderness Act and FLPMA is that exotic plant or animal species cannot be introduced into a wilderness area. Most effective vegetative eradication methods will be prohibited unless it can be determined on a case-by-case basis that the impacts of treatment on wilderness values are minor and that there is a positive and enhancing effect upon wilderness qualities.

The Endangered Species Act may be in conflict with the Wilderness Act. As an example, a stand of tamarisk can drastically reduce the amount of water available at a spring for bighorn sheep. Not removing the tamarisk may seriously threaten a herd of this rare mammal. Hendee and Schoenfeld (1978) believe the Endangered Species Act would take precedence over the Wilderness Act.

Further investigation, of conflicting laws may take place in wilderness activity management plans (WAMP). The WAMP will examine appropriate visitor management methods to mitigate human impacts on the plants and animals and will develop systems to monitor visitation and to detect adverse impacts upon wilderness values at an early stage.

In emergency situations involving health and safety of humans, the quality of wilderness resources can be impinged upon (Wilderness Act, Sec. 4(c). Law enforcement agencies are permitted to use motor vehicles in wilderness ". . .in emergencies involving the health and safety of persons within the area. . .". Unresolved is the question of what constitutes a law enforcement emergency. It is unclear whether "hot pursuit" would permit the chasing, by a vehicle, a suspect in a wilderness area. However, normal law enforcement patrols by vehicle will be barred. Based upon effectiveness and feasibility, this will affect the Border Patrol's access and, at best, will indirectly conflict with Title 8, U.S.C. 1357(a)(3) for wilderness areas within 25 miles of the United States-Mexico border.

Wildfires and insect epidemics can be attacked with any tool available. The tools and methods will be selected to cause a minimum of degradation. Pre- and post-suppression methods are not exempted, but they must result in a direct benefit to wilderness. Treatments that degradate an area's naturalness are not permitted (for example, fuelbreaks, reseeding with exotic species, prescribed burns to reduce fuel buildup, etc.). A fire management plan (FMP) will be prepared in conjunction with implementation of wilderness designation and will identify what pre- and post-suppression methods can be used for fire control. The FMP may alleviate the impacts of wilderness designation through judicious actions (for example, fuelbreaks, prescribed burns, etc.) outside a wilderness area.

The Wilderness Act's "administrative purposes" exclusion is viewed solely in terms of administration of a wilderness area and is considered a prohibition against the use of motorized vehicles for research, reintroduction of native species, and habitat manipulation to benefit plants and animals.

SUMMARY OF IMPACTS

Table I-13 presents a comparative summary of the impacts of the five grazing and four wilderness alternatives.

TABLE I-13

GRAZING IMPACTS SUMMARY
(Projected to 2001)

Element Evaluated	Units	Existing Situation	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
WATER RESOURCES							
1. Livestock Water Use	Ac.Ft.	0.5	0.0	0.3	0.3	0.3	0.5
2. Riparian Zone Stream Bank Erosion	--	--	Decrease	Decrease	Decrease	Decrease	Increase
3. Water Quality	--	--	Improve	No Change	No Change	No Change	Decline
SOILS							
1. Sediment Yield	--	--	Greatly Reduce	Greatly Reduce	Greatly Reduce	Greatly Reduce	Increase
2. Surface Runoff	--	--	Reduce	Reduce	Reduce	Reduce	Increase
3. Soil Sediment Concentration	--	--	Reduce	Reduce	Reduce	Reduce	Increase
VEGETATION							
1. Range Cond.	Ac.	Poor-25,131 Fair-17,123 Good- 2,820 Excel- 0	P-26,756 F-12,568 G- 5,750 E- 0	P-12,808 F-21,047 G-14,821 E- 816	P-17,209 F-19,034 G-10,175 E- 816	P-16,173 F-15,856 G-12,229 E 816	P-29,411 F-10,783 G- 4,080 E- 800
2. Range Trend	%	Declining	Static	Upward	Upward	Upward	Declining
3. % of Vegetative Cover		48%	63%	61%	65%	55%	30%
4. Forage capacity	AUMs	3,393	3,175	7,317	6,217	6,149	3,500

Element Evaluated	Units	Existing Situation	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
WILDLIFE							
1. Bighorn Sheep							
a. Pop Size		80-100	300	50	100	110	75
b. Trend		probably decreasing	stable	decreasing	stable	stable	decreasing
c. Hab. Cond.		Fair	Very Good	Poor	Good	Good	Fair
d. Opportunity for Expansion/ Reintroduction			Greatly enhanced	Greatly reduced	No change	Enhanced	No change
2. Mule Deer							
a. Pop. Size		1-3/sq.mi. McCain Valley. 3-10/sq.mi. remainder of study area.	No significant change	No significant change	slight increase	slight increase	No significant change
b. Hab. Cond.		Fair	Fair	Good	Good	Very Good	Poor
3. Quail							
a. Pop. & Hab. Condition		Dependent primarily on amt. of winter rain.	Moderate Improve.	Slight Improve.	Moderate Improve.	Moderate Improve.	No Change
4 Riparian Species							
a. Pop. & Hab. Condition		10-20% of potential	100% of potential	Less than 10% of potential	40% of potential	50% of potential	No Change

Element Evaluation	Units	Existing Situation	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
CULTURAL RESOURCES 1. Trampling	-	-	Greatly Reduced	Initially reduced. Long-term slight increase.	Initially reduced. Long-term slight increase.	Initially reduced. Long-term increase to present level.	Slow decline as stocking rates & range cond. fall.
2. Erosion	-	-	Greatly Reduced	Reduced	Reduced	Reduced	Increases due to decrease in vegetative cover.
SOCIO-ECONOMICS							
1. Number of operators losing 10% or more of their total forage supply		-	4	3	3	3	0
2. Number of operators having income reductions of 10% or more		-	3	1	1	1	0
3. 1978 Livestock Use	AUMs	-	4,925	4,925	4,925	4,925	4,925
4. 1985 Livestock Use	AUMs	-	0	3,788	3,301	2,992	4,925
5. Change in Use							
Large/Medium Operators	%	-	-100%	-29%	-36%	-41%	0%
Small Operators	%	-	-100%	-43%	-43%	-43%	0%
Minor Operators	%	-	-100%	-51%	-96%	-96%	0%
6. Potentially Available Forage (2001)							
Large/Medium Operators	%	-	-100%	+61%	+52%	-41%	-28%
Small Operators	%	-	-100%	- 4%	- 4%	-43%	-51%
Minor Operators	%	-	-100%	+96%	-96%	-96%	-57%

WILDERNESS IMPACT SUMMARY

Element Evaluated	Units	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Wilderness Designation					
a. Suitable	Acres (%)	54,024 (100%)	0 (0%)	40,086 (74%)	39,383 (73%)
b. Non-suitable		0 (0%)	54,024 (100%)	13,938 (26%)	14,641 (27%)
c. Total WSA		54,024 (100%)	54,024 (100%)	54,024 (100%)	54,024 (100%)
ORV Use Areas Eliminated*	Miles	21	0	14	10
Developed Recreation Sites	Acres	54,024 Option for developments are precluded. (Prohibits development of 3 scenic overlooks of Carrizo Corridor).	54,024 Options for developments remain open. (Permits development of 3 scenic overlooks of the Carrizo Corridor).	40,086 Options for development are precluded. (Permits development of 3 scenic overlooks of the Carrizo Corridor).	39,383 Options for development are precluded. (Prohibits development of 3 scenic overlooks of the Carrizo Corridor).
Hunting, Rockhounding, Sightseeing	Miles	6 Increased walking distances resulting from road and way closure.	0 No Change	2 Same as alternative 1.	2 Same as for alternative 1.
Hiking and equestrian Use	Acres	54,024	54,024	40,086	39,383
		Protected for continued primitive recreational use.	No protection for continued use.	Same as for Alternative 1.	Same as for Alternative 1.
		Improved public access and safety. Also a decline in environmental deterioration by establishing Hell Hole Flats Hiking Trail, Pepperwood Hiking Trail, Bow Willow Hiking Trail.	Same as for Alternative 1.	Same as for Alternative 1.	Same as for Alternative 1.

* Current ORV Regulations limit ORV use to existing roads or ways except for Carrizo Gorge.

Element Evaluated	Units	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Cultural Resources and Native American Values	Acres	54,024	54,024	40,086	39,383
		Increase obstacles to pothunting.	No change	Same as for Alternative 1	Same as for Alternative 1
		Decrease threat from development.	No change	Same as for Alternative 1	Same as for Alternative 1
Fire Management	Acres	54,024	54,024	40,086	39,383
a. Pre and Post suppression techniques		Prohibited unless the wilderness area's qualities are maintained or improved. Resulting in an increase in fire danger.	Permitted	Same as for Alternative 1	Same as for Alternative 1
b. Suppression		May use all means necessary, but limit to the least intrusive techniques within WSAs.	May use all means necessary	Same as for Alternative 1	Same as for Alternative 1
Intolerant Plants	Acres	54,024	54,024	40,086	39,383
		Populations will decline until natural fire occurs.	Populations will remain at present levels or will increase.	Same as for Alternative 1	Same as for Alternative 1
Deer Hunting		High success rates will decline until natural fire occurs which will increase browse and the number of deer. (Applies only to the chaparral areas not to desert scrub areas).	Success rate will decline because of increased competition.	Same as for Alternative 1	Same as for Alternative 1

Element Evaluated	Units	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Hunting of Upland species		High success rates will be maintained to maintenance of habitat and a lack of vehicular access.	Development projects will reduce habitat and result in a decline of success rates.	Same as for Alternative 1	Same as for Alternative 1
Peninsular Bighorn Sheep		Reintroduction into Sawtooth Mountains - less disturbance from access restrictions, but if drilling for water is prohibited, reintroduction would not be possible.	Human access to area may hinder reintroduction.	Same as for Alternative 1	Same as for Alternative 1
	Acres	45,670	14,571	40,086	39,383
		Habitat Protected	Habitat Protected by ACEC	Habitat Protected	Habitat Protected
Watersheds and Soil Erosion	Acres	54,024	54,024	40,086	39,383
		Quality will be maintained or improved by protecting the vegetative cover from disturbances initiated by man.		Same as for Alternative 1	Same as for Alternative 1
Vegetative Manipulations (applies to grazing wildlife, management, and fire management.)	Acres	54,024	54,024	40,086	39,383
		Restricted to actions that will improve an area's wilderness qualities.	No Restrictions	Same as for Alternative 1.	Same as for Alternative 1.

Element Evaluated	Units	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Mining	Acres	54,024 On 1/10/84 or the date of designation, whichever is later, the wilderness areas will be closed to mineral entry. After designation, patents will transfer only ownership of the mineral estate.	54,024 No modification of the mining	40,086 Same as for Alternative 1	39,383 Same as for Alternative 1
Land Development	Acres	54,024 Developments will be precluded.	54,024 Developments are permitted subject to the general land laws.	40,086 Developments will be precluded.	39,383 Developments will be precluded.
Land Disposal	Acres	54,024 Designated land can only be transferred to another Federal agency for management as part of the NWPS.	54,024 Subject to general land laws. Dispose of San Ysidro Mtn. and San Felipe Hills.	40,086 Same as for Alternative 1. Dispose of San Ysidro Mtn. and San Felipe Hills.	39,383 Same as for Alternative 1 Dispose of San Ysidro Mtn. and San Felipe Hills.
Boundary Adjustments		Only additions to existing wilderness areas are permitted. Exceptions are Congressional mandates through legislation.	Subject to general land laws.	Same as for Alternative 1	Same as for Alternative 1

Element Evaluated	Units	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Rights of ways for new Roads and Distribution Lines	Acres	54,024	54,024	40,086	39,383
		Restricted to valid existing rights (e.g., inholdings) and mining developments. Subject to stringent environmental and feasibility evaluations.	Subject to general land laws.	Same as for Alternative 1	Same as for Alternative 1
		(Currently 1 mining claim in San Ysidro Mtns. and 3 inholdings in Sawtooth Mtns. Inholdings are proposed for acquisition).		(Currently 2 inholdings in Sawtooth Mtn. Inholdings are proposed for acquisition.	(Currently 2 inholding in Sawtooth Mtn. 1 inholding in Inner Pasture is proposed for acquisition.)

DEVELOPMENT OF ALTERNATIVES

Planning and Environmental Analysis Process

The proposed action is one part of the planning process which contains three stages: inventory, management framework plan (MFP), and implementation. The first stage involves four events: identification of issues and resource data needs; field studies or inventory; assimilation of inventory data; and analysis of the potential for maintenance, improvement, or enhancement of resource values on the public lands.

In the second stage, preparation of MFP Step 1, recommendations for the management of all resources on public lands are developed. These recommendations are analyzed by the Area Manager who identifies conflicting uses and recommends land-use allocations and alternatives (MFP Step 2). Recommendations and alternatives for grazing management and wilderness management for the Eastern San Diego County Planning Unit are analyzed in this EIS. The District Manager will analyze the Area Manager's MFP Step 2 recommendations and make a final land-use decision (MFP Step 3). This environmental assessment process documents the environmental consequences of the various alternatives and will reflect public comment on this analysis in the final EIS, enabling those comments and concerns to be considered prior to final decisions.

In the third stage, the land-use decisions will be documented and implemented through individual resource activity plans.

The Eastern San Diego County Planning Unit is presently proposed to become part of the California Desert Conservation Area (CDCA). This will require a Congressional amendment to FLPMA. To coincide with the schedule for the preparation of the Desert Plan, wilderness suitability recommendations have been included in this document.

Multiple Use Conflict Resolution

For the purpose of this EIS, resource recommendations related to the range management program and wilderness designations are addressed and analyzed. Table I - 14 demonstrate the conflict resolution for the grazing and wilderness proposed actions. Upon completion of the EIS, decisions related to one, or a combination of alternatives, will be made. Subsequently, on-the-ground activities will be implemented through these decisions (MFP Step 3 and/or activity plans such as Allotment Management Plans or Wilderness Management Plans.)

For additional details on the BLM planning system, one can refer to the BLM Planning Manual and planning documents located in the Riverside, California, BLM District Office.

TABLE I - 14
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
SAN YSIDRO MOUNTAIN SUBUNIT				
A. Allow ephemeral use	1. Protect riparian habitat in Buck Canyon	1. Grazing can have significant impacts on riparian zones in terms of watershed, visual, wildlife, recreation values.	1. Do not establish new allotment or allow ephemeral use.	1. Loss of 200 AUMs.
B. Develop new grazing allotment (200 AUMs with potential for 500 AUMs)	2. Protect habitat of sensitive plant and animal species (*Lilium fairchildii* and golden eagle)	2. Impact of grazing on sensitive plant is unknown but may infringe on habitat. Use could also impact golden eagle habitat.	2. Same as above	2. Same as above.
	3. Dispose of unit due to extensive occupancy trespass.	3. If unit is identified for disposal, undesirable to issue new lease which would have to be cancelled when land is dispose of.	3. Same as above	3. Same as above.

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
SAN FELIPE HILLS SUBUNIT				
A. Authorize 72 AUM's based on current forage production B. Allow ephemeral use. C. Establish a season of use from about 11/1-6/30 D. Prescribe burn selected areas to increase livestock forage by 335 AUMs. E. Increase allotment boundary to include 40 more AUMs of current production.	1. Protect habitat of sensitive species (golden eagle).	1. Grazing would possibly infringe on habitat of golden eagle, but impact not considered significant.	1. Accept all grazing recommendations except for prescribed burning, which is not considered economical. Cancel grazing lease when present lessee relinquishes.	1. No trade-off between grazing and wildlife are considered necessary. Limiting other (non-grazing) activities will protect golden eagle habitat.
	2. Dispose of unit due to manageability concerns.	2. Disposal would preclude livestock grazing use.	2. Dispose of unit if possible in one or more large blocks. Unit or if condition is met, accept MFP 1 grazing recomendations. Grazing will be terminated upon disposal.	

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
JULIAN SUBUNIT				
A. Authorize grazing use as follows: 1. Cigarette Hills-6 AUMs 2. Julian-2 AUMs 3. Banner Queen-102 AUMs 4. Oriflamme-61 AUMs	1. Protect riparian habita in Chariot Canyon; avoid zones in land treatments.	1. Grazing can have significant impacts on riparian zones in terms of watershed, visual, wildlife, and recreation values.	1. Identify riparian zones affected by other uses (grazing, etc.) and rehabilitate and protect those areas. Establish monitoring system to detect adverse impacts on zones early.	1. May have to curtail certain activities or modify them; e.g., pipe water out of zone for livestock; erect fences to keep cattle off banks. After monitoring system established, certain activities may need to be curtailed.
B. Allow ephemeral use				
C. Establish season of use from 11/1-6/30				
D. Eliminate Julian allotment or combine with Banner Queen				
E. Prescribe burn in Chariot Canyon and implement grazing systems to increase forage production by about 1,050 AUMs.				

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
ORIFLAMME SUBUNIT				
A. Authorize 431 AUMs based on current forage production.	1. Reseed (rye grass) and fence eroding sites.	1. Rehabilitation would require keeping cattle off small areas of severe erosion condition class areas.	1. Reseeding and fence eroding sites but use of native species rather than rye grass is preferrable.	1. Negligible AUMs would not be available for livestock use because of fencing until vegetation reestablishes and erosion controlled.
B. Allow ephemeral use.				
C. Reseed 400 acre pasture by mechanical means if current non-use does not increase productivity.	2. Designate as "limited area" for ORVs.	2. Acquiring easement for public access and publicizing as "limited area" may increase vandalism of range facilities, livestock, etc.	2. Designate for limited area--restrict vehicles to Oriflamme Road. Close area to vehicles if vandalism becomes problem.	2. Some range facilities may be vandalized, livestock would be harrassed, ORVs might stray off designated routes and create watershed problems. Impacts would be precluded if area closed.

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
	3. Manage visual resources as Class II where changes may be seen but not attract attention.	3. Existing seeding does not meet Class II guidelines. Retaining pastures by any means would prevent natural succession and conflict with Class II guidelines.	3. Accept all grazing recommendations and manage as Class II if possible. If Class II is not compatible with maintaining reseeding project, manage as Class III.	3. Some visual resources may be lost if area can only be managed as Class III.
	4. Protect sensitive plant species habitat.	4. Grazing may infringe on sensitive species habitat.	4. Accept grazing recommendations due to lack of specific recommendations to protect sensitive plants.	4. May be some impact on plants from continuing grazing.
VALLECITO VALLEY				
A. Authorize 615 AUMs on Vallecito Allotment and 34 AUMs on Oriflamme Allotment.	1. Reintroduce bighorn sheep.	1. Cattle and bighorn sheep may compete for forage, water, space, etc.	1. No forage allocation made for bighorn sheep. It is felt that bighorn will use steep slopes not used by cattle--no competition for forage or space.	1. Bighorn sheep might not be sucessfully reintroduced in Vallecito Valley area if assumption is incorrect.

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
B. Allow ephemeral use. C. Establish season of use from 11/1-6/30. D. Implement grazing systems.	2. Authorize development of sand and gravel deposits.	2. Sand and gravel development would take AUMs out of production through disturbance of vegetation.	2. Allow sand and gravel development in designated locations; reduce AUMs accordingly. No demand for gravel known, however.	2. Loss of small number of AUMs if development occurs. Not presently considered likely.
E. Adjust allotment boundaries north of Highway S-2.	3. Designate as "limited area" for ORVs.	3. Increased public access could result in vandalism or range facilities and harassment of livestock.	3. Designate as "limited area" for ORVs. Restrict vehicles to roads in Potrero and Storm Canyon. Close roads in Potrero at boundary between T. 14 S. and T. 15 S.	3. Could be increased vandalism of range facilities and harassment of cattle if vehicle trespass occurs.
	4. Protect sensitive species habitat.	4. Grazing may infringe on sensitive species habitat.	4. Wilderness designation and restricting public access will provide adequate protection.	4. Could be unquantifiable impact from grazing on areas not recommended suitable for wilderness.

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
CANEBRAKE/INNER PASTURE SUBUNIT				
A. Authorize 303 AUMs for livestock. B. Allow ephemeral use. C. Establish season of use from 11/1-6/30. D. Implement grazing systems.	1. Reintroduce bighorn sheep.	1. Bighorn sheep and cattle may compete for forage, water, space, etc.	1. Reintroduce bighorn sheep. Authorize 265 AUMs for livestock. Prohibit livestock in sheep reintroduction area and wildlife water development. Allow ephemeral use by livestock.	1. 38 AUMs of forage unavailable for livestock.
	2. Protect habitat of sensitive species.	2. Grazing may infringe on sensitive species habitat.	2. Wilderness designation and restricting public access by vehicle will provide adequate protection.	2. Could be unquantifiable impact from grazing on areas not recommended suitable for wilderness.
	3. Allow mineral development (sand and gravel/geothermal).	3. Mineral development would take AUMs out of production through disturbance of vegetation.	3. Prohibit sand and gravel sales. Allow geothermal exploration. Do not lease unless good data to suggest geothermal resource.	3. Sand and gravel deposits will not be available for development (no known or foreseeable demand).
	4. Designate as a "limited area" for ORV.	4. Increased public access could result in vandalism of range facilities and harassment of livestock.	4. Designate as "closed area" and prohibit public access (decision not based on grazing).	4. Public will not have access to Canebrake/Inner Pasture.

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
CARRIZO GORGE SUBUNIT				
A. Authorize grazing on allotments as follows: In-Ko-Pah-268 AUMs Mt. Tule -256 AUMs B. Allow ephemeral use. C. Establish season of use from 11/1-6/30	1. Eliminate livestock from bighorn habitat.	1. Cattle may compete with bighorn sheep for water, forage, space and other essential requirements.	1. Eliminate grazing in enriched desert scrub vegetation zone. Exclude cattle from Upper Bow Willow Spring. Pipe water from livestock water developments to increase availability for wildlife. Remove feral cattle. Authorize 127 AUMs on In-Ko-Pah Allotment and 256 AUMs on Mt. Tule. Allow ephemeral use. Establish season of use from 11/1-6/30. Establish new allotment near Mt. Tule.	1. Cattle utilization of 141 AUMs in enriched desert scrub zone will be foregone. Bighorn may not be able to expand existing range into semi-desert chapparal vegetation zone due to competition with cattle.
	2. Protect sensitive species habitat.	2. Grazing may infringe on habitat sensitive plant and animal species.	2. Designation as wilderness, etc., will adequately protect sensitive species.	2. No known tradeoff.
	3. Fence "Competition Hill" to allow vegetation.	3. Fencing would preclude grazing on small area.	3. Fence "Competition Hill."	3. Negligible AUMs removed from livestock use by fence.

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
MCCAIN VALLEY SUBUNIT				
A. Authorize forage utilization on allotments as follows: 1. Tierra Blanca - 655 AUMs 2. Canebrake - 30 AUMs 3. In-Ko-Pah - 300 AUMs	1. Protect riparian habitat in Bow Willow, Pepperwood and Lost Valley drainages.	1. Grazing can have adverse impacts on watershed, recreation, visual, and wildlife values.	1. Identify areas being impacted by grazing and protect and rehabilitate by fencing buffer strips. May also require piping water out of zone. Establish monitoring system for early detection of adverse impact to riparian areas not initially found.	1. Negligible AUMs might be removed from livestock use.
B. Prescribe burn and implement grazing systems to increase livestock forage.	2. Avoid riparian zones in land treatments.	2. Burning in riparian zones would have adverse impacts on watershed, recreation, visual, and wildlife values.	2. Prohibit land treatments in riparian zones.	2. Forage production not increased over present levels in riparian zone.
C. Allow ephemeral use.	3. Allocate 15 AUMs for present deer herd and 75 AUMs over next 15 years as land treatments are made.	3. Deer and cattle compete for forage.	3. Allocate 15 AUMs for present deer herd and 75 AUMs over next 15 years as land treatments are made.	3. Forage for livestock reduced by like amount.
D. Establish a season of use for Canebrake and In-Ko-Pah from 11/1-6/30.	4. Sell or exchange several small isolated parcels.	4. Sale or exchange could eliminate a negligible number of AUMs from production.	4. Sell or exchange small parcels.	4. Small livestock forage reduction if sold or exchanged.

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
	5. Fence eroding sites at all campgrounds.	5. Fencing out cattle would eliminate a negligible number of AUMs from production.	5. Fence campgrounds to exclude livestock.	5. Negligible livestock forage reduction.
	6. Protect several sensitive plant species habitats.	6. Grazing could infringe on habitat of sensitive species.	6. Prepare HMPs and FMPs. Reseed only with native species. Monitor impacts on sensitive plants.	6. Some negative impacts on sensitive species could occur until/unless monitoring systems detect them when corrective action would be considered.
	7. Provide 5 miles of motorcycle trails in Lark Canyon campground area (In-Ko-Pah Allotment).	7. ORV use could keep cattle out of the area, thus precluding use of forage--decrease for the In-Ko-Pah Allotment.	7. Most recreation use occurs in summer, but cattle season of use ends about June 30--most months no cattle when ORV use is heaviest. Even when use overlaps ORV use is only on weekends, leaving 5 days/week for livestock. Motorcycles will be restricted to trails so they cannot operate everywhere.	7. Could be some harassment of livestock, however, less than at present.

TABLE I-14 (Cont.)
GRAZING CONFLICT RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
TABLE MOUNTAIN SUBUNIT				
A. Authorize 247 AUMs based on current forage production. B. Allow ephemeral use	1. Protect habitat of sensitive plant and animal species (Astragalus sp., Golden Eagle, magic gecko).	1. Grazing could infringe on sensitive species habitats.	1. Authorize 247 AUMs with season of use from about 11/1-2/28. Allow ephemeral grazing. Develop HMPs and determine if impacts are occurring.	1. In interim, ephemeral grazing will be allowed--could result in some impacts.
	2. Develop communication site.	2. Negligible AUMs would not be available.	2. Develop communication site.	2. Negligible AUMs lost.
	3. Allow use of gravel pits and mining location.	3. Same as above.	3. Authorize use of one pit south of Table Mountain but not pit to the north. Manage mining activity under surface management regulations.	3. Same as above.
	4. Permit geothermal developments.	4. If large-scale development occurs (not considered likely), could remove small number of AUMs.	4. Authorize exploration under Notice of Intent. If lease application filed, recycle through planning system before issuing leases.	4. Number of AUMs removed from production depends on level of geothermal development--no present industry interest.

TABLE I - 14
WILDERNESS CONFLICT - RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
SAN YSIDRO MOUNTAIN SUBUNIT				
A. Recommend 2,131 acres as a wilderness area.	1. Dispose of unit due to extensive occupancy trespass.	1. If land disposed of, wilderness could not be established.	1. Do not recommend area as suitable for wilderness.	1. If Congress agrees with non-suitability recommendation, 2,131 acres managed under multiple use sustained yield principles rather than as wilderness.
	2. Manage visual resources as Class III--change may be seen but not dominate landscape.	2. Wilderness to be managed as Class I where visual resources are to be preserved.	2. Same as above.	2. Area would be managed as Class III (not Class I)--change can occur but should not dominate landscape.
SAN FELIPE HILLS SUBUNIT				
A. Recommend entire unit as wilderness area.	1. Designate as "limited area" to ORVs, allow vehicles on selected jeep trails.	1. Vehicles not allowed in a wilderness area.	1. Do not recommend area as suitable for wilderness. Designate as "limited area" to ORVs.	1. If Congress agrees with non-suitability recommendation, 5,265 acres managed under multiple use sustained yield principles, rather than as wilderness.

TABLE I - 14 (Cont.)
WILDERNESS CONFLICT - RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
	2. Manage Class IV changes in landscape may dominate but should borrow from natural elements.	2. Wilderness areas to be managed as Class I where visual resources are preserved.	2. Same as above. Manage as Class IV.	2. Same as above.
JULIAN SUBUNIT				
None	N/A	N/A	N/A	N/A
ORIFLAMME SUBUNIT				
None	N/A	N/A	N/A	N/A
VALLECITO VALLEY SUBUNIT				
A. Recommend 31,097 acres suitable for wilderness designation (calculation includes several thousand acres on Canebrake/Inner Pasture area).	1. Allow mechanized maintenance of range facilities.	1. Numerous pipeline and other water developments could require vehicle or or mechanized maintenance.	1. Range facility maintenance will be considered in WAMP. No serious conflicts foreseen.	1. Maintenance will need to be done by foot or on horseback, or by vehicle (along roads).
	2. Allow sand and gravel development.	2. Sand and gravel operations would impair suitability for wilderness.	2. Suitable gravel deposits occur outside WSA along Highway S-2, no development should occur within WSA.	2. Sand and gravel deposits in wilderness area could not be developed.

TABLE I - 14 (Cont.)
WILDERNESS CONFLICT - RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
	3. Designate as "limited area" for ORVs with use allowed on Potrero and Storm Canyon Roads.	3. Vehicles could not be allowed in wilderness area.	3. Cherry stem both roads in Potrero up to boundary between T. 14 S. and T. 15 S. beyond that, roads would be closed. Cherry stem Storm Canyon Road.	3. Not everyone may be able to hike the last .5 - .75 mile of roads to be closed, thus precluding their partaking in recreation opportunities at end of existing roads.
	4. Manage as Class II--changes may be seen but should not attract attention.	4. Wilderness areas should be managed as Class I.	4. Manage suitable wilderness areas as Class I--non-suitable area Class II.	4. Developments that could not meet Class I criteria would be precluded.
	5. Cooperate with Laguna-Moreno Demonstration area on prescribed burning.	5. Burning could degrade air quality temporarily especially if State designates area Class I. Wilderness designation would constrain fire management opportunities.	5. Allow burning as prescribed in FMP to be developed.	5. Temporary air quality degradation.

TABLE I - 14 (Cont.)
WILDERNESS CONFLICT - RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
	6. Storm Canyon road and Spencer Ranch road completely cuts off 3,892 acres of WSA.	6. Two areas cannot effectively be managed as unit without extensive aquisition dollars. Also, access to potential wilderness area facilitated by leaving Storm Canyon Road open.	6. Eliminate 3,892 acres from wilderness. Recycle through planning system if Spencer Ranch can be acquired.	6. If Congress finds 3,892 acres northwest of Spencer Ranch road non-suitable--manage for multiple use/ sustained instead of for preservation.
CANEBRAKE/INNER PASTURE				
A. Recommend 31,097 acres as suitable for wilderness designation (calculation includes several thousand acres in the Vallecito Valley area).	1. Reintroduce bighorn sheep, allowing mechanical means if necessary.	1. Reintroduction may require mechanical equipment and vehicles, both are incompatible with wilderness.	1. Recommend area as suitable (combined with Vallecito Valley, a total of 25,515 acres) but allow mechanical means to reintroduce bighorn sheep if necessary.	1. Wilderness values could be temporarily degraded while reintroducing sheep if vehicles, corrals, helicopters, etc., are used. Reintroduction could be done before Congressional designation; there may be no need for exemption.
	2. Allow sand and gravel development.	2. Sand and gravel development would impair wilderness values.	2. Prohibit sand and gravel development.	2. Sand and gravel development prevented demand, due to distance from markets.

TABLE I - 14 (Cont.)
WILDERNESS CONFLICT - RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
	3. Manage visual resources as Class III-- changes can be seen but should not dominate.	3. Wilderness areas to be managed as Class I.	3. Manage wilderness area as Class I; all other areas as Class II.	3. Developments not meeting Class I or Class II criteria would be precluded.
CARRIZO GORGE SUBUNIT				
A. Recommend 14,573 acres as suitable for wilderness designation.	1. Prescribe burn selected areas west of proposed wilderness area.	1. Air quality could temporarily be degraded over wilderness area. Could be greater problem if State Class II area.	1. Proceed with burning.	1. Short-term air quality degradation over wilderness area whenever burning occurs to the west.
	2. Designate eastern McCain Valley "Special Area" for ORV use with permit system for access to selected view points at certain seasons.	2. Some scenic overlooks extend slightly into WSA; vehicle access precluded by wilderness designation.	2. Allow vehicle access to selected view points and remove them from wilderness designation (2 acres). Recommend rest of area as suitable.	2. Two acres with wilderness potential would be managed for multiple use sustained yield instead of wilderness preservation. Vehicle access precluded to scenic view points.
	3. Manage visual resources as Class II-- changes can occur but should not attract attention.	3. Wilderness areas should be managed as VRM Class I.	3. Manage wilderness area as VRM Class II	3. Fewer visual intrusions would be allowed in the VRM Class I area.

TABLE I - 14 (Cont.)
WILDERNESS CONFLICT - RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
MCCAIN VALLEY SUBUNIT				
A. N/A	N/A	N/A	N/A	N/A
TABLE MOUNTAIN SUBUNIT				
A. Recommend 958 acres as wilderness area.	1. Develop communication site adjacent to WSA.	1. Although not within WSA, communication site would be adjacent to and visible from the WSA.	1. Do not recommend area as suitable for wilderness designation. Develop Communication site.	1. If Congress agrees with nonsuitability recommendation, 958 acres would be managed under multiple use sustained yield principles rather than as wilderness. Communication site could be developed.
	2. Allow mining location.	2. Under Wilderness Act, no mining location could occur after December 1983.	2. Same as above. Allow mining location to continue.	2. Same as above.
	3. Permit geothermal exploration/ development.	3. Geothermal development could probably not be mitigated to make it compatible, but exploration could be.	3. Same as above. Allow geothermal exploration under Notice of Intent if lease applications are filed--recycle through planning system before making decision.	3. Same as above.

TABLE I - 14 (Cont.)
WILDERNESS CONFLICT - RESOLUTION

Grazing MFP 1 Land use Recom.	Other Conflicting Resource Recom.	Conflicts	Conflict Resolution	Resource Trade-off
	4. Designate areas for sales of jojoba beans.	4. Commercial use in a wilderness study area would basically be incompatible due to access restrictions.	4. Same as above. Designate areas for vegetative sales.	4. Same as above.

CHAPTER 2

AFFECTED ENVIRONMENT

Chapter II

AFFECTED ENVIRONMENT

DATA BASE

Data was collected through field research, review of current research documents prepared by other public agencies, public meetings and workshops, information request letters, and personal contacts with known experts. Additional data sources, as well as data gaps, are described by resource below.

Climate and Air Quality

Precipitation records for the ESDC planning area were obtained from Warner Springs Weather Station located approximately 10 miles to the north of the planning unit. Climatologic information used in this section was obtained from the Science Applications Inc., Draft Report on Baseline Meterology and Air Quality in the Riverside District, BLM, October 2, 1979.

Water Resources

Existing data is limited to a water quality analysis of samples collected from Cuyamaca Reservoir and several springs in the In-Ko-Pah Mountains by the United States Geological Survey in August 1978, under a BLM contract.

Adequate information on fecal coliform levels does not exist. Fecal coliform levels determined in the 1978 water quality study were subject to laboratory error and are not considered reliable.

Information on groundwater resources was obtained from data published in the California Department of Water Resources Bulletin No. 118, 1975.

Soils

Present erosion condition classes were determined through a phase 1 watershed inventory, which was made in 1974 and 1975. The erosion condition classes represent the present situation. This does not reflect the soils erosion susceptibility nor potential for erosion based upon the physical properties of the soils.

The soils information was obtained from the Soil Survey of San Diego County, California (1973); an Order 2 Soil Survey. Several locations in the study area, which were not covered by the Soil Survey, had mapping boundaries extrapolated from nearby mapped areas. Soil losses are estimates developed by BLM specialists through field examinations.

Vegetation

The present forage capacities were determined from field inventories in 1978. The Multistage Inventory Technique was used to collect data (i.e., vegetation classification, floristics list, density and cover) that could be transcribed into a carrying capacity that would be allocated to livestock and wildlife. (See Appendix A.) Range condition and trend were determined through comparison of field surveys in 1975 (using the 100 point step-toe method) and 1978 (using the multi-stage inventory technique). From field observations during vegetative inventories (1978), the range conditions described in Chapter III by professional judgment were considered to be representative overall. The range conditions portrayed in Chapter III describe livestock forage conditions and apparent trend.

Projected forage production was determined through the use of the Soil Conservation Service (SCS), range site descriptions and, in areas to receive land treatments, the following soils productivity criteria: annual ranifall, water holding capacities of the soils, and soil texture (Agriculture Handbook No. 328, USDA, 1962). Production figures described in the range sites descriptions compared with soils and current vegetation condition/trend data for ESDC area were considered the most reliable data source in predicting future forage levels.

There is no baseline data on the predicted levels of forage production for this area through land treatment. The production levels in Chapter III were derived from the sources previously discussed in combination with soil type, productivity and fertility levels present, water holding capacity, and rainfall.

Wildlife

Information relating to condition and trend of vegetation was utilized to develop information for key wildlife types.

(a) Special studies designed to measure bighorn/cattle diet overlap, bighorn behavioral patterns, movement of bighorn sheep herds, and overall population status of bighorn in the study area.

(b) Personal communication with biologists from the California and Arizona Departments of Fish and Game, U.S. Fish and Wildlife Service, and the BLM, who have documented the impacts of recent cattle operations on bighorn and their habitat.

(c) Personal observations (winter of 1979-1980) of the apparent on-going impacts of cattle occupancy of bighorn habitat in the ESDC area.

There are no studies available for this specific area concerning the range, ecology, and relative abundance of mule deer, or basic vegetative data on condition and prevalence of mule deer habitat. The effects of cattle grazing on mule deer and their habitat were developed through analysis of similar data developed for bighorn and comparison of other in other areas. The effects of wilderness areas on mule deer in the EIS area are based on evaluation of available data.

Information on the distribution of other wildlife species and habitats within the EIS area is presented in the ESDC/URA Step II (Riverside, BLM, 1978). No studies concerning the effect of cattle grazing on other wildlife were conducted.

Cultural Resources and Native American Values

The primary data sources for this study consist of the Class 1 cultural resource overview for inland San Diego County (Wirth 1978) and the BLM Class II inventory of the EIS area prepared by Archaeological Systems Management (ASM, 1980). Additional surveys have been undertaken in the area by a variety of organizations and individuals and are summarized in the Class I and II studies.

The Class II study was a 7% intensive sample survey of the approximately 98,000 acres of public land within the study area. The sample was conducted in two stages, a 5% stratified random statistical sample and a 2% intuitive survey.

The Table Mountain WSA was not represented in the Class II survey, and the Oriflamme grazing allotment is split among the three different sampling strata used in the Class II survey. The data base for these areas had to be extrapolated from the survey data.

The estimates of site density throughout the EIS area were estimated from the Class II statistical sample. It is important to note, however, that the sample universe used to estimate site densities does not correspond to either the grazing allotments or the WSA's. In several cases, the level of sampling was not sufficient to obtain density estimates. Therefore, the site density estimates shown in Table II-13 have been extrapolated from the Class II data; actual densities may vary. Therefore, the estimates presented should only be viewed as indicators of areas of relative site densities and not as absolute figures.

Information for Native American Values was gathered by visiting with tribal leaders and others from various reservations in San Diego County, and using procedures recommended by the Native American Heritage Commission (Rios, 1979).

Recreation

Information on recreation use in the southern part of the planning unit was obtained from the McCain Valley Resource Conservation Area Recreation Activity Management Plan (RAMP). Only in the McCain Valley is a comprehensive body of data available; precise recreation visitor use estimates for the public lands within the northern portions of the planning unit have been based on field observations, public meetings, and professional judgment.

Visual Resources

The BLM's established method for inventory and evaluation of visual resources was used as the basis for data collected for the environmental impact statement. The inventory involves three general components: Scenic Quality, Visual Sensitivity, and Distance Zones. The combination of these components determines the Visual Resource Management (VRM) Class for each particular unit or subunit within the study area.

Wilderness

The wilderness qualities were identified by field examinations using the methods described in the BLM Wilderness Inventory Handbook, September 27, 1978; public meetings, and analysis of public comments on the California Statewide Non-Desert Wilderness.

Initial and intensive inventories conducted specially for this EIS revealed few factual discrepancies with BLM findings within the ESDC planning area. In fact, they generally supported the BLM's wilderness inventory results and the general recreation information contained in URA Step III.

Socio-Economics

Data on the individual operators was obtained from BLM records, and written and oral information volunteered by affected ranchers.

CLIMATE AND AIR QUALITY

Mean annual precipitation in the ESDC Planning Area averages between 8 and 16 inches. The range of precipitation is from 30 inches in the west to about 6 inches in the east. Snowfall is not common. Midwinter (November through January) has the highest amounts of rainfall with August recording the more precipitation for the summer months. Average monthly, annual mean, and maximum precipitation amounts are shown in Table II-1.

The daily relative humidity varies between approximately 50% during winter months and 40% in the summer months.

The mean annual temperature of the planning unit is 68 F. Average monthly temperatures range from 44 F in January to 73.5 F in July at Warner Springs. Table II-2 provides the monthly means and extremes temperatures recorded at the Warner Springs station.

The topography affects the length of the frost-free periods. The western boundary of the planning unit has a frost-free season of approximately 150 days. The eastern boundary has approximately 200 days of frost-free season.

TABLE II-1

WARNER SPRINGS PRECIPITATION (INCHES)
MONTHLY MEANS AND EXTREMES

STATION		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	ANNUAL
Warner Springs	Mean	2.37	0.96	2.18	1.46	0.46	0.07	0.41	0.79	0.47	0.06	1.55	1.95	12.91
	Max.	10.71	6.65	7.80	5.09	2.41	1.02	1.61	5.20	2.93	2.41	8.14	6.53	---

TABLE II-2

WARNER SPRINGS TEMPERATURES (^{o}F)
MONTHLY MEANS AND EXTREMES

STATION		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
Warner Springs	Mean	44.4	46.2	48.2	52.3	58.3	65.0	73.5	73.0	68.2	59.5	50.9	45.5
	Mean Max.	59.7	67.5	64.2	69.4	76.9	85.2	94.0	93.4	89.0	79.0	67.7	61.3
	Mean Min.	28.9	29.8	32.4	35.1	44.8	53.0	53.0	52.5	47.5	40.0	34.0	29.6
	Max.	84	84	89	92	102	106	110	107	105	97	88	84
	Min.	11	14	17	19	25	27	34	28	28	22	15	9

The planning unit is endowed with a high-quality airshed. The Alpine Monitoring Station located approximately ten miles to the west of the planning area, is one of the two points in the BLM Riverside District which is not impacted by atmospheric pollutants in excess of national standards.

Although the southwestern portion of San Diego County is densely populated, the concentrations of population and heavy industry are not sufficient to create detrimental air-quality conditions over the planning area.

WATER RESOURCES

Surface Water

Lakes and Reservoirs:

Although there are no major lakes or reservoirs in the area there are several small retention dams, built for the purpose of supplying water to livestock and wildlife. These dams provide small water sources averaging in capacity from 1 to 2 acre feet of water (see Map II-1).

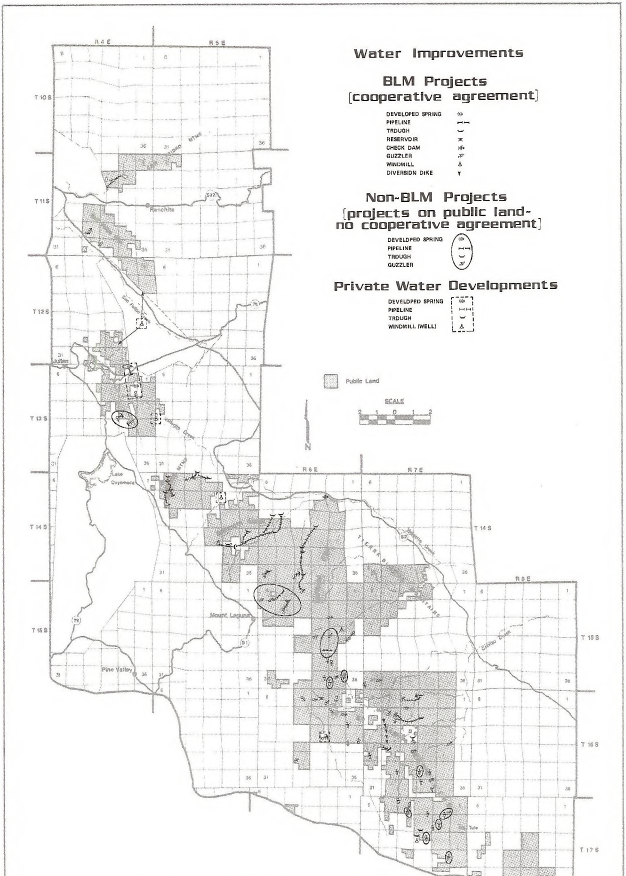
Springs:

Spring locations are shown on Map II-1. These springs serve as water sources for wildlife and livestock during varying times of the year and are intermittent in flow.

Water Quality:

Existing water quality data is limited to Cuyamaca Reservoir and several springs in the In-Ko-Pah Mountains (see Table II-2). Total dissolved solids (TDS) of Cuyamaca Reservoir range from 92 to 243 mg/l. By comparison water samples from the springs have exhibited TDS concentrations from 360 mg/l to nearly 8,000 mg/l. Water quality data from these springs are shown in Table II-2. The value of TDS and the concentration of chloride and sulfate are extremely high for several of the springs. The recommended criteria for human drinking water range from 250 mg/l to 500 mg/l of combined chloride and sulfate.

The primary beneficial use of these high mountain spring waters is for bighorn sheep and other wildlife species.



EAST SAN DIEGO COUNTY PLANNING UNIT

Grazing and Wilderness Environmental Statement

map no. II-1

TABLE II-3

WATER QUALITY OF SPRINGS IN THE IN-KO-PAH MOUNTAINS
(USGS, 1978)

Spring	TDS (mg/l)	Chloride (mg/l)	Sulfate (mg/l)
Black water	1,430	230	570
Diablo	1,310	140	600
Grapevine	360	59	19
Macho	367	42	15
Rattlesnake	582	130	26
Cimarron	3,350	550	1,500
Jacumba Jim	1,170	360	120
Carrizo	7,930	2,000	2,700

Table III-3 shows three springs (Black water, Cimarron and Carrizo) that are in excess of approaching excessive levels of the recommended limits of chloride and sulfate concentrations for livestock and wildlife consumption (1500 mg/l for chlorides and 500 mg/l for sulfate). (California State Water Resources Control Board.) Several field examinations of these springs has revealed little evidence of fecal contamination by livestock (Russi, pers. comm., 1979). It is likely that the entry of sulfate and chloride into these waters is of natural mineral origin.

Streamflow records from gaging stations within and near the EIS area were obtained. Flow of these streams is intermittent, exhibiting seasonal flow, and flow in response to individual storms. No sediment yeild data is available for these streams. Since less than 5% of the EIS area is classified as subject to moderate to severe erosion, however, it is assumed that sediment production from accelerated erosion is minimal.

Groundwater

Quantity:

In the EIS Area, 9 basins have been identified by the California Department of Water Resources as significant sources of groundwater. They are identified by name and number and further described in Table II-4.

Depth to groundwater ranges from 0 to 200 feet. The estimated usable capacity of the Warner Valley Basin is 55,000 acre feet. No estimates of capacity are available for the other basins. Current development of groundwater in the area is limited. Most development has been for livestock watering and domestic use.

Quality:

Groundwater quality within the EIS area is highly variable. The most prevalent problems are associated with dissolved minerals which render water unsuitable for beneficial use in local areas. Water quality conditions of the individual groundwater basins are summarized in Table II-4.

Water Use

Water use consists of rural consumptive uses, some irrigation, recreation, and animal consumptive requirements. Present consumption rates for livestock on public land in the EIS area is .5 acre feet per year.

Water is supplied through a number of improvements such as spring developments, pipelines, wells, reservoirs, small retention dams, and guzzlers. Developed water supplies for wildlife are nearly non-existent, particularly in bighorn sheep habitat (see Map II-1 for locations of water developments).

SOILS

Soil Types

Three groups of soils are found in the EIS area. The groups described below are divided into six major soil associations (see Soils Map II-2 and Appendix E) which are discussed in detail in the San Diego County Soil Survey Manual (SCS-1973).

Group I. Excessively Drained to Well-Drained, Nearly Level to Moderately Sloping, Very Gravelly Sands to Silt Loams on Alluvial Fans in Desert Areas:

The soils in this group are excessively drained to well drained, very gravelly sands, loamy coarse sands, sandy loams, and silt loams. They formed in material derived from acid igneous rock and mica schist. Slopes range from 0% to 9%.

The elevation ranges from 100 to 2,500 feet. The average annual rainfall is between 3 and 8 inches, and the average annual air temperature between 70° and 74° F. The frost-free season is 240 to 275 days. The vegetation consists of desert shrubs, cactus, and scattered annual grasses and forbs. Unless irrigation water is available, they produce only a limited amount of forage for livestock. They represent all of the cultivated acreage in the desert and make up about 26% of the EIS area.

Group V. Excessively Drained to Well Drained, Moderately Sloping to Very Steep Loamy Coarse Sands to Loams on Uplands in Mountainous Areas:

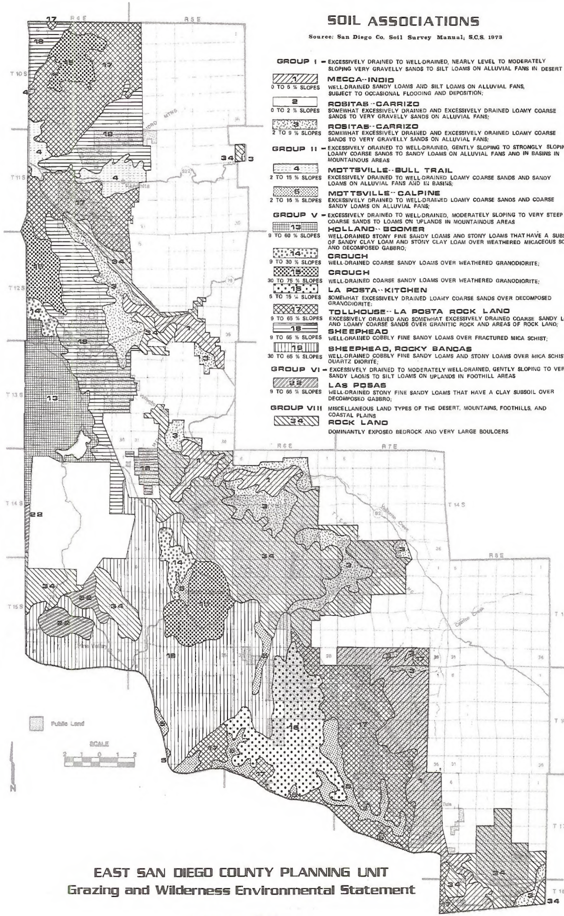
TABLE II-4

GROUNDWATER BASINS WITHIN THE MCCAIN VALLEY EIS STUDY AREA 1/

Basin	Total Area (sq. mi.)	Development	Water Quality
San Felipe Valley	40	Limited for Livestock and domestic use.	Locally chloride, sulfate and TDS high for domestic use; chloride and TDS high for irrigation use.
Vallecito-Carrizo Valley	200	Limited for Livestock and domestic use.	Locally magnesium, sulfate, chloride, fluoride and TDS high for domestic use; percent sodium high for irrigation use.
Coyote Wells Valley	100	Limited for domestic use.	Locally poor quality for domestic and irrigation use.
Canebrake Valley 2/			
Mason Valley 2/			
Jacumba Valley-East 2/			
Warner Valley	40	Limited for irrigation, municipal, domestic, industrial, and stock watering uses.	Locally fluoride high for domestic use, percent sodium high for irrigation use.
Ranchita Town Area 2/			
Pine Valley 2/			

1/ Taken from California's Ground Water, California Dept. of Water Resources Bulletin No. 118, 1975.

2/ No additional information given.



SOIL ASSOCIATIONS

Source: San Diego Co. Soil Survey Manual; S.C.S. 1973

GROUP I – EXCESSIVELY DRAINED TO WELL-DRAINED, NEARLY LEVEL TO MODERATELY SLOPING VERY GRAVELLY SANDS TO SILT LOAMS ON ALLUVIAL FANS IN DESERT AREAS

Symbol	Slopes	Association	Description
▨ 1	0 TO 5 % SLOPES	**MECCA--INDIO**	WELL-DRAINED SANDY LOAMS AND SILT LOAMS ON ALLUVIAL FANS, SUBJECT TO OCCASIONAL FLOODING AND DEPOSITION;
2	0 TO 2 % SLOPES	**ROSITAS--CARRIZO**	SOMEWHAT EXCESSIVELY DRAINED AND EXCESSIVELY DRAINED LOAMY COARSE SANDS TO VERY GRAVELLY SANDS ON ALLUVIAL FANS;
3	2 TO 9 % SLOPES	**ROSITAS--CARRIZO**	SOMEWHAT EXCESSIVELY DRAINED AND EXCESSIVELY DRAINED LOAMY COARSE SANDS TO VERY GRAVELLY SANDS ON ALLUVIAL FANS;

GROUP II – EXCESSIVELY DRAINED TO WELL-DRAINED, GENTLY SLOPING TO STRONGLY SLOPING LOAMY COARSE SANDS TO SANDY LOAMS ON ALLUVIAL FANS AND IN BASINS IN MOUNTAINOUS AREAS

Symbol	Slopes	Association	Description
4	2 TO 15 % SLOPES	**MOTTSVILLE--BULL TRAIL**	EXCESSIVELY DRAINED TO WELL-DRAINED LOAMY COARSE SANDS AND SANDY LOAMS ON ALLUVIAL FANS AND IN BASINS;
5	2 TO 16 % SLOPES	**MOTTSVILLE--CALPINE**	EXCESSIVELY DRAINED TO WELL-DRAINED LOAMY COARSE SANDS AND COARSE SANDY LOAMS ON ALLUVIAL FANS;

GROUP V – EXCESSIVELY DRAINED TO WELL-DRAINED, MODERATELY SLOPING TO VERY STEEP LOAMY COARSE SANDS TO LOAMS ON UPLANDS IN MOUNTAINOUS AREAS

Symbol	Slopes	Association	Description
▦ 13	9 TO 60 % SLOPES	**HOLLAND--BOOMER**	WELL-DRAINED STONY FINE SANDY LOAMS AND STONY LOAMS THAT HAVE A SUBSOIL OF SANDY CLAY LOAM AND STONY CLAY LOAM OVER WEATHERED MICACEOUS SCHIST AND DECOMPOSED GABBRO;
14	9 TO 30 % SLOPES	**CROUCH**	WELL-DRAINED COARSE SANDY LOAMS OVER WEATHERED GRANODIORITE;
15	30 TO 75 % SLOPES	**CROUCH**	WELL-DRAINED COARSE SANDY LOAMS OVER WEATHERED GRANODIORITE;
15	5 TO 15 % SLOPES	**LA POSTA--KITCHEN**	SOMEWHAT EXCESSIVELY DRAINED LOAMY COARSE SANDS OVER DECOMPOSED GRANODIORITE;
▩ 17	9 TO 65 % SLOPES	**TOLLHOUSE--LA POSTA ROCK LAND**	EXCESSIVELY DRAINED AND SOMEWHAT EXCESSIVELY DRAINED COARSE SANDY LOAMS AND LOAMY COARSE SANDS OVER GRANITIC ROCK AND AREAS OF ROCK LAND;
▤ 18	9 TO 65 % SLOPES	**SHEEPHEAD**	WELL-DRAINED COBBLY FINE SANDY LOAMS OVER FRACTURED MICA SCHIST;
▥ 19	30 TO 65 % SLOPES	**SHEEPHEAD, ROCKY BANCAS**	WELL-DRAINED COBBLY FINE SANDY LOAMS AND STONY LOAMS OVER MICA SCHIST AND QUARTZ DIORITE;

GROUP VI – EXCESSIVELY DRAINED TO MODERATELY WELL-DRAINED, GENTLY SLOPING TO VERY STEEP SANDY LAOMS TO SILT LOAMS ON UPLANDS IN FOOTHILL AREAS

Symbol	Slopes	Association	Description
▨ 22	9 TO 66 % SLOPES	**LAS POSAS**	WELL-DRAINED STONY FINE SANDY LOAMS THAT HAVE A CLAY SUBSOIL OVER DECOMPOSED GABBRO;

GROUP VIII MISCELLANEOUS LAND TYPES OF THE DESERT, MOUNTAINS, FOOTHILLS, AND COASTAL PLAINS

Symbol	Slopes	Association	Description
▧ 34		**ROCK LAND**	DOMINANTLY EXPOSED BEDROCK AND VERY LARGE BOULDERS

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Grazing and Wilderness Environmental Statement

map no. II-2

The soils in this group are excessively drained to well-drained loamy coarse sands to loams. They formed in material derived from mica schist, gabbro, granodiorite, and quartz diorite. Slopes range from 5% to 75%. On many areas these soils are eroded. In most areas rock outcrops or stones cover 2% to 10% of the surface.

The elevation ranges mainly from 2,000 to 6,000 feet. Some peaks rise above 6,000 feet. The average annual precipitation is between 12 and 38 inches, and the average annual air temperature between 53° and 58° F. The frost-free season is 135 to 230 days. The vegetation consists mainly of coniferous woodland or chaparral and an understory of annual grasses and forbs.

These soils are used for range, wildlife habitat, and watershed.

This group occupies about 25% of the EIS area.

Group VIII. Miscellaneous Land Types of the Desert, Mountains, Foothills, and Coastal Plains:

The miscellaneous land types in this group vary considerably in soil characteristics and qualities. They are used only for wildlife habitat, watershed, and recreational areas. This group occupies about 49% of the EIS area.

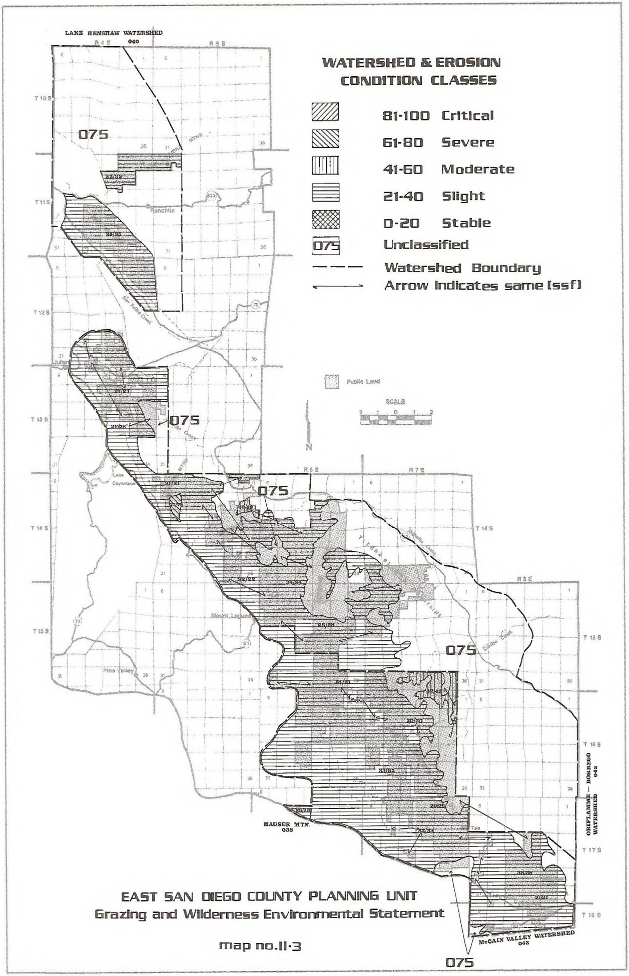
Soil Erosion

The EIS area is divided into four watershed areas (1979): Hauser Mountain, Lake Henshaw, Oriflamme-Borrego, and McCain Valley. Grazing occurs in all but Hauser Mountain (see Map II-3). The annual maximum allowable soil loss in the planning unit is 3.45 tons per acre. This is the rate of soil erosion (from rain and wind) which cannot be exceeded if a high level of vegetative production is to be sustained economically and indefinitely. Soil loss due to water erosion within the watersheds is not of major significance because of low annual surface runoff and the high percentage of ground cover in many areas. Vegetative ground cover throughout the planning unit averages 48% (Soil Survey, San Diego, 1979). Present estimated annual sediment yield by watershed is shown in Table II-5.

TABLE II-5

ANNUAL SEDIMENT YIELD (ESTIMATED BY WATERSHED)

Watershed Area	Acres	Average Estimated tons/acre/year	Tons of Sediment Per Year
038 Hauser Mountain	212	.50	106
040 Lake Henshaw	8,171	.75	6,128
042 Oriflamme-Borrego	46,766	1.50	70,149
043 McCain Valley	43,753	1.00	43,753
Total	98,902	.93	120,136



EAST SAN DIEGO COUNTY PLANNING UNIT
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map no.II-3

The majority of the unit falls in a moderate erosion class.

The infiltration rate of soils within the planning unit is moderate. Consequently, surface runoff is low. Rates are moderate in the Lake Henshaw watershed, moderate to slow in the Oriflamme-Borrego watershed and moderate to slow in the McCain Valley watershed.

Approximately 40% of the land in the planning unit consists of slopes of 50% and greater. This land is not considered accessible by cattle. These soils are steep and in a high or severe erodibility class.

MINERALS

The study area contains three areas of mineral deposits. These are the Julian, Metal Mountain and Sacatone Districts (see Map II-4). All Districts are located upon public lands, with some 300 mining claims registered. Although prospecting and some development have occurred from the 1890's to the present, no significant economic deposits have been mined in this region.

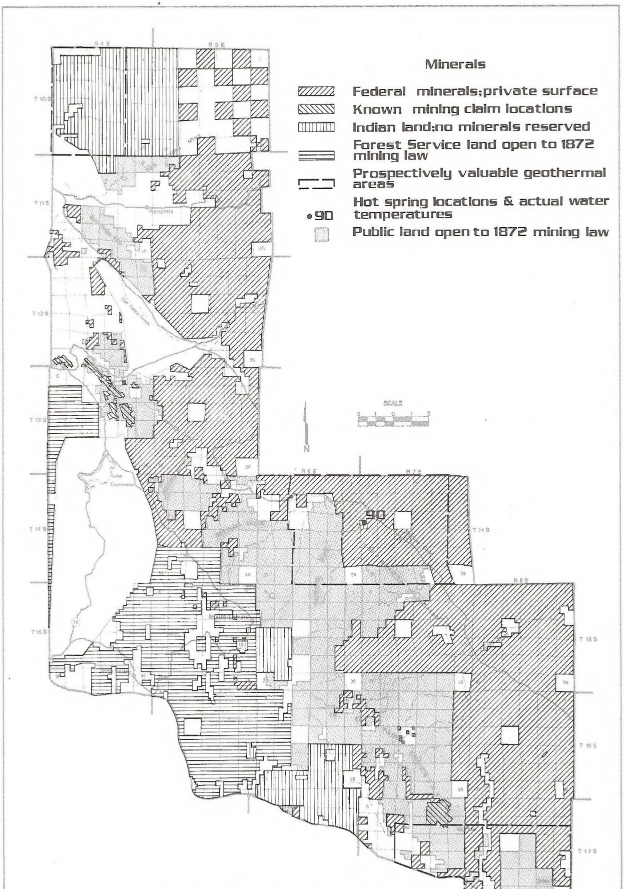
Three areas have been classified as prospectively valuable for geothermal resources because hot springs are present. The area has no potential for oil, gas, sodium or potash.

VEGETATION

Introduction

The EIS area is bordered by the Colorado Desert on the east and by coniferous forest of the Laguna Mountains on the west. Along the southern limits of the area a sparse, open vegetative pattern exists, while the northern areas contain a very dense pattern. Because of the ecotonal situation, strong east-west topographic gradient and north-south precipitation gradient, the EIS area contains a complex vegetative pattern. This complex pattern has also been modified by fire, flood, drought, and grazing.

For the purpose of this discussion, all vegetation associations have been placed into one of the following habitat types (Cheatham and Haller, 1975): creosote bush scrub, enriched desert scrub (alluvial), enriched desert scrub (steep and rocky), semi-desert chaparral (alluvial), semi-desert chaparral (steep and rocky), mixed chaparral, chamise chaparral, mixed conifer oak woodland, oak groves, riparian woodland, desert wash, and grassland. These types correspond to plant communities as defined by Munz and Keck (1970). Each of these communities is made up of several vegetation associations. All the vegetative communities are depicted Map on II-5 and are listed by allotment in Table II-6.


Minerals
▨ Federal minerals;private surface
▨ Known mining claim locations
▥ Indian land;no minerals reserved
▤ Forest Service land open to 1872 mining law
Prospectively valuable geothermal areas
• 90 Hot spring locations & actual water temperatures
Public land open to 1872 mining law
R 4 E
R 5 E
R 6 E
R 7 E
R 8 E
T 10 S
T 11 S
T 12 S
T 13 S
T 14 S
T 15 S
T 16 S
T 17 S
T 18 S
Ranchita
San Felipe Creek
Lake Cuyamaca
90
94;96
SCALE
2 1 0 1 2
N

EAST SAN DIEGO COUNTY PLANNING UNIT
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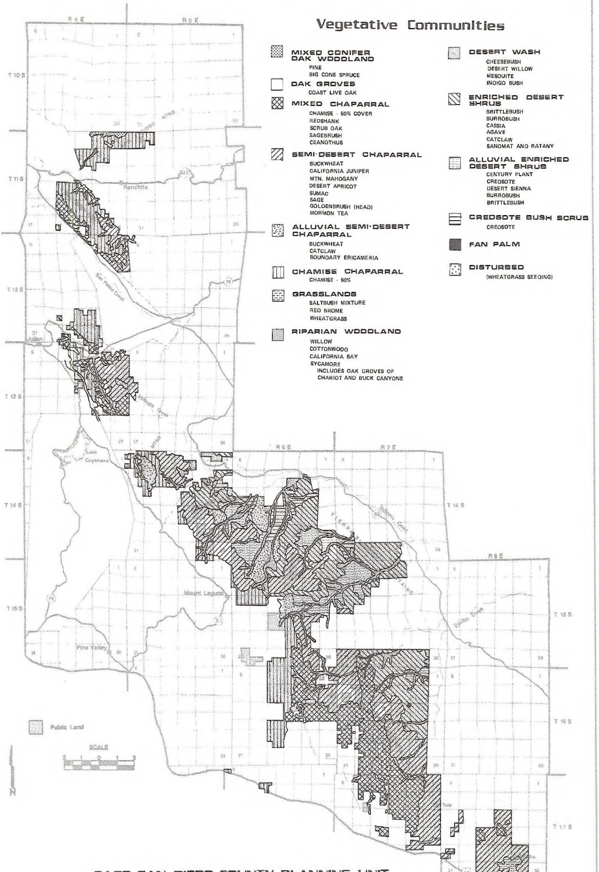
map no. II-4

Table II-6
Plant Communities (Habitat Types), Acreages and Percentages by Allotment

Allotment	Chamise Chaparral Acres	%	Mixed Chaparral Acres	%	Semi-Desert Chaparral Steep Acres	%	Oak Groves Acres	%	Mixed Conifer/ Oak Woodland Acres	%	Riparian Woodland Acres	%	Creosote Scrub Acres	%	Desert Wash Acres	%	Grass Land Acres	%	Semi-Desert Chaparral Alluvial Acres	%	Enriched Desert Scrub Steep Acres	%	Enriched Desert Scrub Alluvial Acres	%
1. San Felipe (1,285 acres)	573	45	363	28	349	27																		
2. Cigarette Hills (120 acres)	120	100																						
3. Banner Queen (4,124 acres)	2,006	49	1,724	42	20	T	224	6	6	T	124	3												
4. Julian (40 acres)	40	100																						
5. Oriflamme (6,794 acres)	4,240	62			1,484	22	21	T					186	3	142	2					721	11		
6. Vallecitos (15,214 acres)	315	2	530	3	2,321	15							684	4	1,181	8			2,394	16	3,457	23	4,332	28
7. Canebrake (8,838 acres)	950	11			1.477	17									1,007	11					2,228	25	3,176	36
8. In-Ko-Pah (16,287 acres)			3,241	20	5,286	32	29	T							853	5					6,747	41	131	1
9. McCain Valley (360 acres)			360	00																				
10. Mt. Tule (4,710 acres)	62	1	2,685	57	1,944	41									19	T								
11. Tierra Blanca																								
a. McCain Valley (9,866 acres)	2,268	23	3,669	37	3,636	37	167	2			46	T									80	1		
b. Table Mountain (5,679 acres)					5,125	90									36	1	518	9						
TOTAL ACRES 73,317 Total ac. of habitat (% of habitat) in the EIS area	10,574 (14%)	--	12,572 (17%)		21,642 (30%)	--	461 (1%)	--	6 (T)	--	170 (T)		870 (1%)	--	3,238 (4%)	--	518 (1%)	--	2,394 (3%)		13,233 (18%)	--	7,639 (10%)	--



EAST SAN DIEGO COUNTY PLANNING UNIT
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map no. II-5

Plant Communities

All communities are grazed by livestock. The enriched desert scrub, semi-desert chaparral, grasslands/annual forbs and, to a lesser degree, mixed chaparral communities are somewhat more important to grazing due to their accessibility, desireability, and present forage availability. Those communities on steep and rocky terrain are generally inaccessible; use is correspondingly lower.

Creosote Bush Scrub (870 acres-1% of the EIS area): This community occurs in the low, desert side of the area. Temperatures can be high, often up to 105 F., and rarely below 35 F. Rainfall is between 4 and 7 inches with an elevation range of 100 to 2,000 feet. Because of high temperatures and rapid evaporation, the conditions for plant growth are more extreme than in more mesic communities. These plants are adapted to long periods of drought, with water storage capabilities that may last for more than a year.

Characteristic species within the creosote bush scrub are creosote bush, brittlebush, burrobush, and ocotillo. All these types can be found on slopes, fans and valleys. Species of importance to livestock include big galleta grass.

Enriched Desert Scrub, Alluvial, (7,857 acres-8% of this EIS area): This community is associated with the major drainage on the desert side of the area. Distribution is similar to the creosote bush scrub but more localized. The temperature and rainfall are similar to those of the creosote bush scrub. The elevation is between 1,600 and 2,600 feet.

Characteristic species within the enriched desert scrub (alluvial) are desert century plant, creosote, catclaw, desert senna, burrobush, and brittlebush. All these types can be found on slopes and fans of 2% to 9%. Species of importance to livestock include desert needle grass and big galleta grass.

Past heavy cattle use is evident in many areas of this community. However, field observations have indicated that many areas are improving, because of the presence of perennial grass seedlings.

Enriched Desert Scrub, Steep and Rocky, (19,192 acres-19% of the EIS area): The steep rocky areas of the enriched Desert Scrub occur in areas of the rugged In-Ko-Pah, Tierra Blanca, and Sawtooth Mountains. Most of the slopes are between 30% and 60% with some slopes reaching 100%. Elevation is between 2,000 and 3,400 feet. Rainfall is less than 10 inches annually.

Characteristic species associations that are found within this community are brittlebush, agave, cholla, and catclaw.

Semi-Desert Chaparral, Alluvial, (2394 acres-2% of the EIS area): This community is found on alluvial materials in upper portions of Canebrake Canyon, Potrero Canyon, parts of Storm Canyon, and Rodriguez Canyon. Elevation ranges between 2,200 and 3,600 feet. Slopes are moderate, 5% to 15%. Annual rainfall is between 4 and 8 inches.

Characteristic species associations are catclaw, California buckwheat, deerweed, and boundary ericameria. Perennial species of value to livestock include desert needle grass and mountain mohogany.

Semi-Desert Chaparral, Steep and rocky, (27,658 acres-28% of the EIS area): This community is found on the slopes of the In-Ko-Pah, Sawtooth, and Oriflamme Mountains (above Rodriguez Canyon), and on the eastern end of San Felipe Hills. Slopes are moderate to steep, 30% to 65%. Elevation ranges between 2,800 and 4,200 feet. Annual rainfall is between 15 and 20 inches.

Characteristic species associations are California juniper, mountain mahogany, sumac, desert apricot, Mormon tea, California buckwheat, goldenbush, and Great Basin sagebush.

Some areas have been impacted by heavy ORV use, some areas have been impacted by grazing, and some areas are relatively unused.

Mixed Chaparral (15,236 acres-15% of the EIS area): This community occurs in a large block of land between the McCain Valley escarpment and the base of Thing Mountain. It can also be found along Chariot Canyon and the base of the San Felipe Hills. The topography is gentle to moderately sloping, 5% to 30%. Elevations range between 3,500 and 5,000 feet. Annual rainfall ranges between 12 and 20 inches.

Characteristic species of the mixed chaparral are chamise, scrub oak, and redshank. Species used by cattle include desert needle grass and foxtail.

Effective fire supression in these areas has resulted in dense stands of chaparral with sparse understory.

Chamise Chaparral (20,605 acres-21% of the EIS area): This community is found at elevations ranging between 3,000 and 5,600 feet on moderate to steep slopes, 30% to 65%. Rainfall is between 15 and 20+ inches, annually. Localities are Thing, Oriflamme, Volcan, San Ysidro, and San Felipe Mountains, and the western side of Chariot Canyon. This community is often in excess of 50% ground cover.

Characteristic species include chamise and cupleaf ceanothus. Midgrass bunch occurs in the chamise chaparral community in the form of wheatgrass seedlings. Plants of importance to cattle include desert needle grass.

The condition is generally poor because of effective fire suppression which has allowed for dense stands of chamise. Where chamise has been cleared, seeded conditions are poor to good.

Mixed Conifer (528 acres-less than 1% of the EIS area): This community represents less than 1% of the total vegetative cover within the area. This community is found in the San Ysidro Mountains and in two small areas on the west side of Chariot Canyon. The elevation ranges between 4,800 and 5,800 feet on moderate to steep slopes, 30% to 60%. Annual rainfall is 15 to 20+ inches.

Characteristic species include ponderosa pine and big cone spruce.

It is reported that moderate cattle use occurs in some portions of the community.

Oak Groves (527 acres-less than 1% of the EIS area): This community is scattered throughout the area and occurs within the mixed chaparral and chamise chaparral communities. There are at least eight distinct groves occurring in McCain Valley, with other groves found in the southern end of Chariot Canyon, Buck Canyon (San Ysidro Mountains), and Oriflamme Canyon (Oriflamme Mountains). Oak groves are composed of coast live oak and interior live oak. These areas provide nesting and feeding habitat for a variety of bird species.

Some areas show signs of heavy human disturbance and moderate livestock use.

Riparian Woodland (170 acres-less than 1% of the EIS area): This community occurs in four major drainages in the area, ranging between 3,400 and 5,000 feet.

This community is found in upper Bow Willow Canyon, Pepperwood Canyon, Storm Canyon, and Buck Canyon. These areas provide nesting and feeding habitat for a variety of birds, amphibians, mammals, and reptiles.

Characteristic species found in this community are California bay, California cottonwood, and sycamore. Giant wildrye occurs here and is of importance to livestock.

Desert Wash (3,348 acres-3% of the EIS area): This community occurs in the major drainages on the eastern side of the In-Ko-Pah, Tierra Blanca, and Sawtooth Mountains. Elevations range between 1,000 and 1,300 feet on slopes 2% to 9%. Annual rainfall is generally less than eight inches.

Characteristics species are cheesebush, mesquite, desert willow, and allscale.

Most of these washes are going through a revegetation process after being scoured by flash floods during hurricanes in 1976 and 1977.

Grassland-Annual Forbs (517 acres-less than 1% of the EIS area): This community is found on Table Mountain at the southeast corner of the area. Elevation ranges between 3,400 and 3,800 feet with the annual rainfall between 5 and 10 inches.

Characteristic species found are red brome and clover.

Appendix A, Section 1, Table A-1 gives the acres of each vegetation type within each allotment. Appendix A, Section 2, Table A-2, gives a brief description of species generally found in each vegetative type.

Range Condition and Apparent Trend

Range Condition

Range condition was determined from 1975 field surveys. Based on comparisons of this data with vegetative surveys conducted in 1978, it was determined that range conditions existing in 1975 are generally descriptive of range conditions in 1978. (See Data Base, Section A, Chapter II).

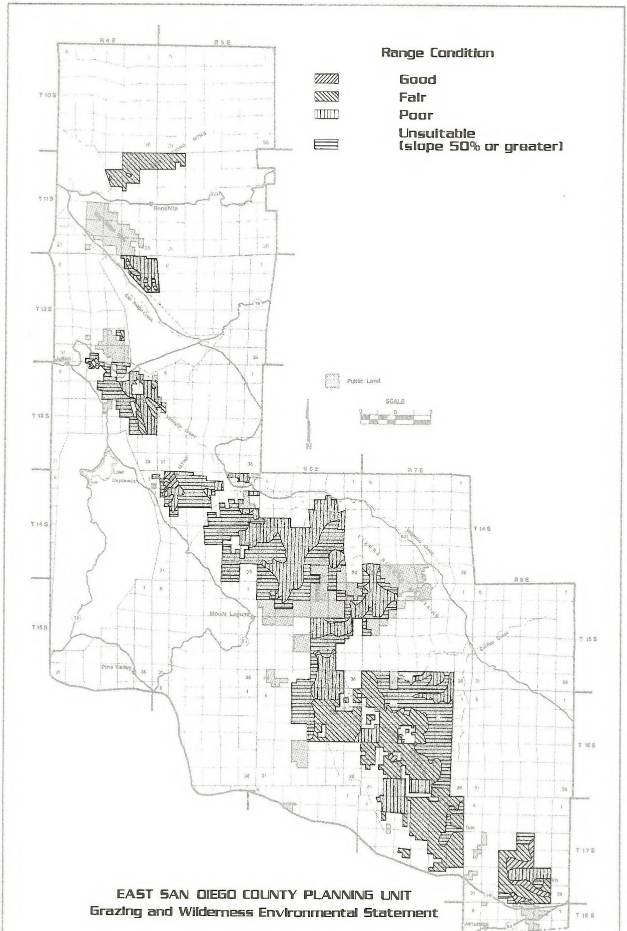
The condition class was determined by the percent of plants in each of three classes: desirable, intermediate, and undesirable.

Table II-6 describes the range condition classes by allotment. Map II-6 shows the present range conditions.

Apparent Trend

Initial surveys were conducted during 1967 and 1968. However, because of lack of adequate documentation concerning condition rating and location of transects, no direct inference from transects could be made from that period to the present. Later surveys conducted in 1975 and again in 1978 provided a good comparison in allotments of range condition ratings, species composition, plant vigor, seedling establishment, litter and cover, soil surface factors, and general field notes made from range conservationist observations concerning overall characteristics of range condition in each allotment. In addition to these comparisons, for the purpose of general ranking and comparison, values were set for the condition classes (poor = 1, fair = 2, good = 3, excellent = 4) for the transects run in 1975 and 1978. An overall allotment condition class was determined from each set of allotment transects. The values for each condition class were totaled and then divided by the total number of transects in each allotment to obtain an overall condition rating. The sets of data were compiled for each of the two survey years by allotment and then the overall condition classes were compared. The difference between the two surveys served as a good indicator of the upward or downward trend in vegetation when aligned with the various indicator factors previously discussed.

It should be noted that trend is a basic tool with which to judge changes in overall range condition. For the purposes of this EIS it is important particularly concerning evaluation of the present situation and for projecting the impacts of continuing present management under the no action alternative.



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map no. II-6

TABLE II-7

PRESENT RANGE CONDITION BY ALLOTMENT
EASTERN SAN DIEGO COUNTY EIS AREA 1/

ALLOTMENT	EXCELLENT	GOOD	FAIR	POOR	UNSUITABLE (STEEP ROCKLAND)	TOTAL
G.R. #6019 Allot. #7019						
1) Tierra Blanca						
1) McCain Valley*	0	0	5,098	3,000	2,030	10,128 AC.
2) Table Mtn.*	0	2,080	1,745	890	965	5,680 AC.
G.R. #6008 Allot. #7008						
2) McCain Valley	0	0	360	0	0	360 AC.
G.R. #6015 Allot. #7015						
3) San Felipe	0	0	0	1,062	223	1,285 AC.
G.R. #6025 Allot. #7025						
4) Mt. Tule	0	0	3,810	600	300	4,710 AC.
G.R. #6014 Allot. #7014						
5) In-Ko-Pah	0	160	5,710	2,970	7,443	16,283 AC.
G.R. #6018 Allot. #7018						
6) Banner Queen	0	80	160	2,730	1,153	4,123 AC.
G.R. #6020 Allot. #7020						
7) Canebrake	0	100	0	4,208	4,528	8,836 AC.
G.R. #6045 Allot. #7045						
8) Vallecito	0	0	0	8,175	7,038	15,213 AC.
G.R. #6037 Allot. #7037						
9) Oriflamme	0	400	240	1,400	4,873	6,913 AC.
G.R. #6028 Allot. #7028						
10) Cigarette Hills				70	50	120 AC.
G.R. #6002 Allot. #7002						
11) Julian				26	14	40 AC.
Totals	0	2,820	17,123	25,131	28,617	73,691
% of Totals	0	4%	24%	34%	38%	100%

1/ Data from 1975 Range Condition Survey.
* Consolidated into one allotment (Tierra Blanca Allotment).

TABLE II-8

APPARENT TREND

ALLOTMENT	SUMMARY RATINGS BY CONDITION CLASS	RANGE TREND TENDENCY	RATIONALE
1) Tierra Blanca	Fair to Poor condition	Declining	Approximately 50% of the allotment is in fair to poor condition with considerable steep rocky slopes inaccessible to grazing livestock. The McCain Valley unit (10,128 acres) has a declining trend; however, the Table Mountain Unit (only 5,680 acres) has a slightly upward trend with annual grass species and semi-desert Chaparral with good plant vigor, and excellent litter.
2) McCain Valley	Fair to Poor condition.	Declining	Trend in the McCain Valley Allotment has been downward due to increasing density of chaparral over last 3 years which has prohibited the growth of palatable forage species in the understory. Vigor and density of desirable plant species down due to severe encroachment by dense Chaparral. Current allocation is for 30 AUMs on a total of 360 acres and is surrounded by private lands making it difficult to control and regulate use for select species.

TABLE II-8 (Cont.)

APPARENT TREND

ALLOTMENT	SUMMARY RATINGS BY CONDITION CLASS	RANGE TREND TENDENCY	RATIONALE
3) San Felipe	Slightly above Poor to Poor condition.	Declining	Predominant vegetation is mixed and chamise chaparral. Terrain is rough and rocky; soil fertility is low and chaparral is increasing.
4) Mt. Tule	Fair to moderately Poor condition	Static	With the majority of the 4,710 acres moving between fair and poor the trend is static. Due to encroachment of chaparral and low seedling establishment of perennial species some areas are declining. However, over the last three years, some areas devoid of chaparral and which have desert needlegrass are in fair condition with a stable trend.
5) In-Ko-Pah	Fair to slightly above Fair condition.	Upward	The area is predominately semi-desert chaparral and enriched desert scrub habitats. Comparison with both grazed and ungrazed areas demonstrated an increase in plant vigor, perennial seedling establishment, and ground litter. The area includes a total of

TABLE II-8 (Cont.)

APPARENT TREND

ALLOTMENT	SUMMARY RATINGS BY CONDITION CLASS	RANGE TREND TENDENCY	RATIONALE
			about 16,000 acres and receives a current annual use of 250 AUMs as opposed to previous use of 1,150 AUMs 6 years ago.
6) Banner Queen	Poor to slightly below Fair condition.	Declining	Of the 4,123 acres in the allotment, 2,730 acres are in poor condition, 160 acres in fair condition due to clearing of brush for major firebreak, and 1,153 acres are classified unsuitable for grazing. Predominant vegetation is dense chamise chaparral with a trend toward increased density of these species. Low fertility and steep slopes adversely affect forage productivity.
7) Canebrake	Poor to slightly above Poor condition.	Upward	Although condition rating is slightly improving, this is primarily due to past grazing use. There has been a noted increase in seedling establishment of perennial grasses with good vigor and a decline in chaparral or other undesirable plants.

TABLE II-8 (Cont.)

APPARENT TREND

ALLOTMENT	SUMMARY RATINGS BY CONDITION CLASS	RANGE TREND TENDENCY	RATIONALE
8) Vallecito	Poor to slighly above poor.	Upward	Basic vegetation communities are Enriched Desert scrub (alluvial and Rocky types), Semi-desert chaparral, Desert washes and Creosote scrub. These communities support good remnants of galleta and desert needle grass, the two principal grazed perennials. In addition, there is a significant abundance of ephemeral grass species such as red top drome, three awn, six weeks, and filaree. Past heavy grazing pressure and poor distribution of livestock in some areas has caused poor forage condition. Current practices have indicated an upward trend. Progression has been moderate in the last two years.

TABLE II-8 (Cont.)

APPARENT TREND

ALLOTMENT	SUMMARY RATINGS BY CONDITION CLASS	RANGE TREND TENDENCY	RATIONALE
9) Oriflamme	Poor	Declining	Observed utilization of key grass species is well over 50% on species such as desert needle grass and galleta in the grazed areas. On the balance of the area (which is steep and rocky with dense Chamise chaparral and enriched desert scrub habitat) the condition is fair. It should be noted that the allotment is surrounded by a large expanse of private land and there has been difficulty in control over movement of livestock over long periods in the past.
10 & 11) Cigarette Hills and Julian (combined due to size and characteristics)	Poor condition.	Declining	Apparent trend is downward on these small Julian 40 Acres Cigarette 120 acres allotments. They are predominantly chamise chaparral type areas. Allocation is very low and they have low fertility soils, low seedling establishment and are surrounded by private lands.

Vegetative Production

The estimated forage production as shown on Table II-9, is approximately 3,788 AUMs (3,201 AUMs presently suitable and 587 AUMs potentially suitable with the development of water). Presently suitable forage production was determined by applying four criteria: areas over four miles from water were not included, areas greater than 32 Ac/AUM were excluded, areas greater than 50% slope were excluded, and areas with soil surface factors (erosional state) greater than 60 were excluded. (Forage allocations based on these criteria are described in more detail in Appendix A, Section 3.)

TABLE II-9

EXISTING LIVESTOCK FORAGE PRODUCTION

Allotment	Presently Suitable AUMs	Potentially Suitable with water
San Felipe	72	
a) Boundary change	40	
Cigarette Hills	6	
Banner Queen	102	
Julian	2	
Oriflamme	465	
Vallecito	615	
a) Boundary change	15	
Canebrake	333	
In-Ko-Pah	568	
Mt. Tule	308	
McCain Valley	20	
Tierra Blanca	655	247
New Allotment A		200
New Allotment B		140
Total	3,201	587

Ephemeral Range

The study area is classified as a Perennial/Ephemeral Range which means it generally produces sufficient perennial forage with substantial annual plant production in years of favorable rainfall. The annual plant production is what constitutes the ephemeral range which varies from year to year according to precipitation and temperature.

The study area is located in a transitional zone between a mediterrean range (receiving between 10 and 20 inches of rainfall annually) and a desert range (receiving below 4 inches of rainfall per year). The area cannot be considered of the desert type. The study area as a whole generally receives an average of 14 inches. Due to the nature of these climatic conditions and the affect of this climate on the plant communities described previously in this chapter, it is apparent the area supports a high yield of ephemeral forage species which can contribute significantly to livestock production.

Examples of the important ephemeral grass species present in the 12 plant communities within the area are foxtail fescue (Festuca megalura), red brome (Bionus rubens), soft chess (Bromus mollis), wild oats (Arena fotus), and various forbs such as filaree (Erodium cicutarium) and clover (Trifolium spp.).

These annual plants have been shown to be in moderate abundance and density throughout the study area. For example, within the last four years BLM Range Conservationists have recorded ephemeral production by occular estimate at levels below 100 pounds per acre to as high as 800 pounds per acre.

Threatened or Endangered Plant Species

Sensitive plant species found in the EIS area, along with an explanation of their sensitivity ratings, are listed in Appendix B. Other sensitive plants which may occur, but were not found or recently verified, are also listed in Appendix B.

Based upon published information, review of soon-to-be published information, and personal consultation, the following plants deserve special consideration:

Limnanthes gracilis var parishii (Cuyamaca meadowfoam) is currently State listed and will probably be re-proposed for Federal listing as endangered. It is only known from the Lake Cuyamaca area, and the public land on which it occurs reportedly represents one of the best populations and roughly 10% of its total range. The parcel of public land is surrounded by State park land and is too steep for grazing.

Lilium fairchildii will probably be State and Federally listed, and is very rarely found; the most recent verified identification was from a bulb. It was found in a non-grazing allotment area, although the identification has not yet been verified by a lily expert. If the identification is correct, this is a very significant find. Trespass homesites are the primary threat at this time at the site. Grazing is not a problem at present.

Astragalus douglasii var. perstrictus is widespread throughout McCain Valley with some on Table Mountain, but that is about 90% to 95% of the known population of this plant. It probably will not be State or Federally listed. It may respond favorably to disturbance and it may not be eaten by cattle.

Hemizonia floribunda (Tecate tarweed) is generally not eaten by cattle, but is susceptible to trampling. It seems to colonize disturbed soils. The last few years it has done very well, being reported in many new places where it had not been seen before. It was found on public land only in the Lark Canyon area. It is not known whether ORV use in that area is beneficial or detrimental to these plants; however, soil compaction is expected to reduce habitat. It seems to congregate in drainages where cattle concentrate.

Caulanthus simulans is known from only one location in the study area. This species appears to colonize burned areas. This plant may be rare due to fire exclusion in the area.

Heuchera brevistaminea (Laguna Alumroot) was found on public land only on the 40-acre parcel where Cuyamaca Meadowfoam was found. There is an old unconfirmed location in upper Potrero Canyon. Its steep, rocky, riparian habitat tends to protect this plant from impacts very well.

Hulsea californica was found in open areas along the tops of mountains along the Laguna escarpment. It is almost weedlike in its colonization of disturbed areas such as fuel breaks.

Lupinus excubitus var. medius (Interior Bush Lupine) was found in sandy, dry washes fairly widespread throughout the southwestern part of the study area.

Opuntia bigelovii var. hoffmannii (Jumping Cholla) may be a hybrid and thus not sensitive at all. Taxonomic problems must be worked out before final status of this plant is determined. Ranchers sometimes desire to remove cactus to decrease competition for more desirable forage species.

FIRE MANAGEMENT

Parts of the Oriflamme, Tierra Blanca and Vallecito allotments are within the Laguna-Morena Demonstration Area (L-MDA), a multi-agency cooperative land and fire management experimental area. Most of this land is currently being grazed, except for the majority of the Vallecito allotment, where most L-MDA land is unsuitable for grazing due to slope. Since the objectives of any L-MDA project would include fuels management and enhancement of resources, there would be little long term conflict with livestock grazing.

LAND USE

Livestock Grazing

There are 11 grazing allotments in the EIS area (see table I-11). Each has one operator; no operator uses more than one allotment. Nine allotments are licensed to graze livestock yearlong. Two allotments are licensed for winter-spring grazing.

Cow-calf operations are the most common within the EIS area. The majority of the cow-calf operations produce a calf crop each year with some heifer calves being retained for herd replacements. Generally, the remainder of the calf crop is sold (usually between six and 12 months of age). Most of the time, calving is done in the spring.

Allotment Management Plans (AMPs)

Three AMPs have been written for allotments within the EIS area (see Table II-10). The Oriflamme allotment has an implemented grazing system.

TABLE II-10

ALLOTMENT MANAGEMENT PLANS

Allotment	Grazing Systems	Season	Date Implemented
Oriflamme	2 pasture deferred-rotation 1 winter-spring	4/1-9/30 10/1-9/31	1969
Tierra Blanca	3 pasture rest-rotation 1 pasture winter	3/1-9/30 10/1-2/28	Not Implemented
Mt. Tule	4 pasture rest-rotation	Yearlong	Not Implemented

In the Oriflamme allotment the two pasture deferred rotation system was applied to an area that was cleared and seeded with wheatgrass. One pasture was seeded with pubescent wheatgrass and is in good condition. The other pasture was seeded with a variety of wheatgrass species (intermediate, tall wheatgrass and crested wheatgrass) and is in poor condition. This failure may be attributed to the kind of species seeded, the climate following seeding, and the heavy grazing pressure. The winter-spring pasture has shown little improvement. This may be the result of uncontrolled trespass on public land since the size of the winter spring pasture is small and there are no fences to control the number of cattle coming off private land.

AMPs have not been implemented in the Tierra Blanca and Mt. Tule allotments due to the failure to develop management facilities and water sources, and the loss of leases on state land by the lessees. Table II-8 depicts the basic elements of these AMPs.

Other Land Uses

In this planning unit, there are essentially two distinct kinds of rights-of-way: local and regional distribution lines and major interstate transportation and utility easements. In the first category are the various electric power and telephone distribution lines, gas pipelines, and roads which serve the area. In the category of major easements are the railroad and interstate highway. Generally, these routes follow the topography and were originally located before scenic or aesthetic considerations were a recognized public concern. The major east-west highway, Interstate 8 (I-8), transverses the planning unit from the southeast and proceeds to the west for about 7 miles where it becomes the southern boundary of the planning unit. The San Diego and Arizona Eastern Railroad meanders through Carrizo Gorge in the southern part of the planning unit. This railroad has not been used since 1976 when Tropical Storm Doreen severely damaged portions of the track.

An application by San Diego Gas and Electric for a right-of-way across public administered land is currently pending. Application CA-5865 is for a 500 kv power transmission line from Yuma, Arizona, to San Diego, California.

United States Forest Service (USFS) withdrawals constitute the largest acreage of withdrawn land in this planning unit. The FS withdrawal contains land in private ownership within the boundary of the withdrawal. Another large withdrawal is for the Indian Reservations.

There is one recreation and public purposes lease for a sanitary landfill in the planning unit. It is located just southeast of Julian. There is one mineral springs lease located at Agua Caliente Springs.

There are three 5-year temporary use permits for apiaries located in the southern half of the planning unit. There are considerable unauthorized uses of public lands in the study area taking the form of: Agricultural activities, residential, apiary sites, utility uses, enclosures, road rights-of-way, commercial uses, indiscriminate dumping, and airports.

WILDLIFE

Introduction

The Eastern San Diego County URA describes habitat condition for 12 major habitat types within the area. A detailed discussion of habitat condition by each allotment is provided in Appendix C. The overall acreages and percent of each major habitat type are shown in Table II-6. Appendix H lists those species found in the planning unit.

Peninsular Bighorn Sheep Populations

Distribution and Habitat

The Peninsular bighorn is classified as a rare mammal by the State of California (At the Crossroads, 1978). Censuses suggest that the population is decreasing; the current population is estimated at 80-100 animals (Hicks, 1978). The declining bighorn population is the result of uncontrolled off-road vehicle activity, cattle grazing, and other general human use resulting in depletion of essential habitat. Peninsular bighorn range within the study area is presented on the Bighorn Sheep Distribution Map (Map II-7). Hicks (1978) defined as intensively used bighorn range that area which supports most of the bighorn for most of the year (see Bighorn Sheep Distribution Map II-6). Presently, the Peninsular bighorn in the planning unit are concentrated in the In-Ko-Pah and Jacumba Mountains. Table II-11 shows Peninsular bighorn waterhole counts in the In-Ko-Pah Mountains and Jacumba Mountains. Sheep only and occasionally and briefly into limited areas of historic range in the Tierra Blanca Mountains (Jorgensen and Turner, 1975). Bighorn are absent from historic areas in the Sawtooth Mountains.

Specific locations where lambs are born are not known. Lambs at two weeks of age and older have been observed in groups with their mothers. These maternal groups occupy slopes of 100% or more with south or southwest facing aspects (Cunningham, 1979). These "lambing areas" (maternal groups) are very likely to change from year to year depending on various physical influences (Hansen and Deming, 1973).

TABLE II-11

PENINSULAR BIGHORN SHEEP CENSUS RESULTS,
1973-1979, IN THE IN-KO-PAH AND JACUMBA MOUNTAINS,
EASTERN SAN DIEGO COUNTY EIS AREA a/

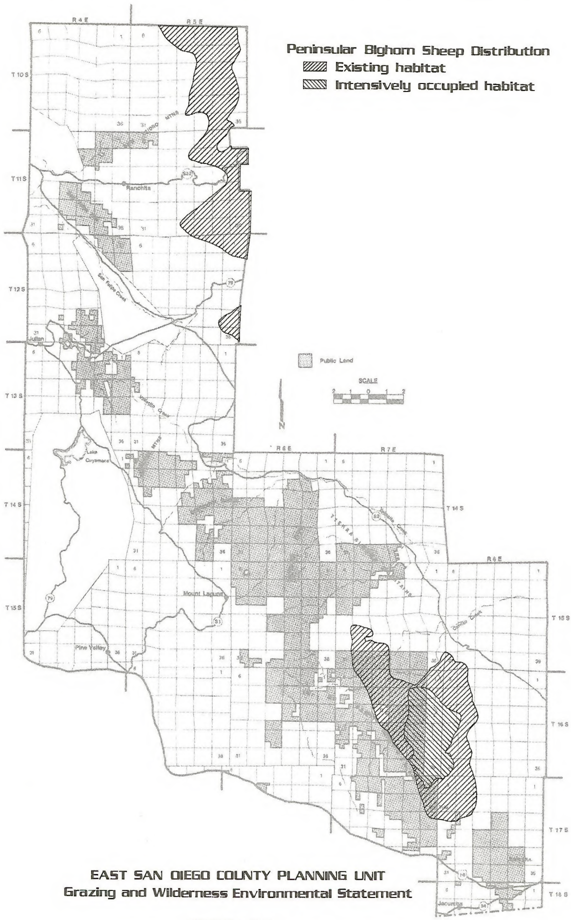
Census Year	Number Rams	Number Ewes	Number Lambs	Number Yearlings	Total
1973	22	47	1	5	75
1974	9	55	7	5	76
1975	14	76	15	7	112
1976	19	95	9	7	130
1977	20	59	1	2	82
1978	17	47	0	5	69
1979	5	49	4	2	60

a/ Population census figures of Peninsular bighorn in the ESDC planning area are provided by the Anza-Borrego Desert State Park and reflect the results of sheep concentrating near specific waterholes due to the seasonal availability of water. For the purposes of the analysis in this EIS, population is assumed to be 80 to 100 animals, as per study by BLM inventories in 1978 and 1979 previously cited.

Specific locations where lambs are born are not known. Lambs at two weeks of age and older have been observed in groups with their mothers. These maternal groups occupy slopes of 100% or more with south or southwest facing aspects (Cunningham, 1979). These "lambing areas" (maternal groups) are very likely to change from year to year depending on various physical influences (Hansen and Deming, 1973).

Three habitat types are occupied by bighorn on the eastern escarpment and desert slopes of the In-Ko-Pah grazing allotment and Mt. Tule grazing allotment: desert wash, enriched desert scrub, and semi-desert chaparral. The entire 28 square miles of range occupied by bighorn in the planning area falls within the In-Ko-Pah and Mt. Tule grazing allotments; this is a small remnant of the suspected historic habitat (Weaver, et. al. 1968; Hicks, 1978). Approximately 10 square miles of the habitat is used intensively by sheep during the summer.

Bighorn inhabit steep-walled canyons and ridges intersected by broad, sandy and narrow, rocky washes which are important to sheep as escape terrain. Sheep spend almost three-quarters of their time on slopes of 75% or greater. Large, bouldered slopes provide bighorn with shelves and rock overhangs as shelters. Bighorn apparently prefer east or southeast facing slopes with most of their activity occuring between 1,300 and 2,000 feet elevation. Data on vegetation in the areas used by sheep in one canyon indicate that they prefer slopes with scattered perennial shrubs with average plant cover between 6 and 11 percent (Hicks, 1978). Bighorn avoid the thick growth around springs.



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map no. II-7

Diet

Results of preliminary fecal analysis studies of bighorn in the study area indicate that forbs are an important seasonal component of the diet. Table II-11 summarizes bighorn and cattle seasonal diets (Cunningham, 1979). Cunningham reported that six species of plants which made up 63 percent of the bighorn diet comprised only 13 percent of the cattle diet. However, of the 35 plant types recorded in the bighorn diet, 28 (77%) were also utilized by cattle.

TABLE II-12

DIET OF BIGHORN AND CATTLE
IN-KO-PAH MTNS., McCAIN VALLEY AREA, 1978 AND 1979
BASED ON ANALYSIS OF FECAL MATERIAL a/

Season		Plant Type (%)					
		Grasses	Forbs	Browse	Sedges	Ferns	Cacti
Summer (May-Sept)	Bighorn	2.24	23.78	66.08	--	0.07	7.49
	Cattle	21.69	14.97	55.54	1.23	--	0.83
Fall (Oct-Nov)	Bighorn	1.65	49.11	32.39	--	--	16.67
	Cattle	8.84	8.34	79.58	0.06	--	3.09
Winter (Dec-Feb)	Bighorn	1.79	33.58	57.50	--	0.61	6.25
	Cattle	4.80	8.78	73.72	0.06	--	11.96
Spring (Mar-Apr)	Bighorn	5.75	38.86	50.68	--	--	2.76
	Cattle	2.52	23.80	63.34	0.05	--	0.22
Overall Average	Bighorn	2.85	36.33	51.71	--	0.17	8.29
	Cattle	11.96	13.97	68.04	0.35	--	4.02

a/ From: Cunningham, 1979

Water

The availability of water is critical to the future existence of bighorn in the planning area. During summer, seven permanent water sources, all perennial springs, are available to bighorn in the intensively used range in the Jacumba and In-Ko-Pah Mountains. Three of these sources are on public land, while the remaining four are in Anza-Borrego Desert State Park. Sheep normally stay within one mile of permanent water during the summer. Competition between feral cattle or cattle in trespass and bighorn occurs during this period around some of the water sources. The amount of water consumed daily by bighorn during summer is variable and is dependent on age, sex, length of stay away from water, together with temperature and other physical factors. In other seasons, cooler temperatures and the increase in plant tissue water content allow sheep to be less dependent on springs, permitting use of habitat away from the summer intensive range. Bighorn are capable of meeting water requirements as long as the diet contains 1.5 to 3.0 ml water per gram dry weight of vegetation (Turner, 1973).

Existing Conflicts

The In-Ko-Pah, Mt. Tule, and Tierra Blanca grazing allotments encompass essential bighorn sheep habitat. Cattle occupy bighorn range in upper Carrizo Gorge near Tule Canyon, the Grapevine Spring area of Rockhouse Canyon, and in the Sombrero Peak area. Hicks (1978), reported that cattle sign was observed in many areas of 50 percent slope or greater; these areas are not included in grazing allotments. Light (1969) reported that cattle were observed in the upper watershed of Rockhouse Canyon (enriched desert scrub habitat) in the In-Ko-Pah Allotment and around Grapevine Spring during the summer and had been utilizing the area since early spring. Recently, bighorn have been observed only occasionally in the vicinity of Grapevine Spring (Russi, pers. comm., 1980). An estimated four to six head of cattle were using the Carrizo Gorge area within the intensively used bighorn sheep habitat at Four Frogs Spring and Cimaron Spring during June, 1979 (Russi, pers. comm., 1980). Cattle have increased their use of a critical bighorn summer water source near Sombrero Peak (Semi-desert chaparral habitat) in the Tierra Blanca allotment. This source previously received regular spring and summer use by bighorn, but they have not been observed using it since 1977 (Russi, Pers. comm., 1980). Annual intensive summer surveys of this bighorn habitat by Anza-Borrego State Park personnel since 1972 has not recorded cattle use within this area (Turner and Jorgensen, 1975).

Off-road vehicle activity conflicts with bighorn habitat on the McCain escarpment on the east side of McCain Valley (Hicks, 1978). Jeep trails penetrate the upper portion of the intensive bighorn range used year-round by sheep. Light and Weaver (1973) determined that high levels of recreational activity are promoting the exclusion of bighorn from their home range.

Pellet-group transects in the In-Ko-Pah allotment indicate that deer and bighorn sheep avoid off-road vehicle trails (Hicks, 1978). The frequency of pellet groups increased significantly with increasing distance from the trails. Off-road vehicle activity on the McCain escarpment and in Carrizo Canyon generally reaches the highest level during winter and spring.

Mule Deer

The population size and distribution of mule deer (Odocoileus hemionus) within the planning area is unknown. However, there has been a continuous decrease in the number of deer harvest taken from the McCain Valley area since 1962 (McKinnie, pers. comm., 1980). This has probably been due to a combination of factors, including an increase in chaparral density due to fire suppression.

Mule deer normally occur above 2,000 feet elevation in the Planning area with deer occasionally observed near permanent water in low desert areas. The greatest abundance of deer may occur in the northern half of the Planning unit above 4,000 feet elevation. The deer density in the McCain Valley area has been estimated at 1 to 3 per square mile (Eastern San Diego County URA, 1978).

Hicks (1978) noted that deer were observed most often on terraced areas in the Chaparral and oak woodland habitats of the McCain Valley area (3,000 to 4,000 feet elevation) where they occurred sympatrically with bighorn.

Diet information for mule deer within the planning area is not available. Mule deer are believed to occupy the same general range year-round. Deer may occupy a wintering area between Potrero and Storm Canyons immediately north of McCain Valley. Deer and bighorn sheep ranges overlap on the McCain Valley escarpment.

Since deer generally occupy more mesic areas within the Planning area, water is probably not a limiting factor to the population.

No information is available concerning conflicts between mule deer, livestock and other wildlife for water, food, cover, and space.

Wild Horses and Burros

There are no known populations of wild horses and burros within the planning unit.

Other Wildlife

Other Mammals

Common mammals, other than wild ungulates occurring in the ESDC planning area, include cottontails, jackrabbits, bats, opossums, shrews, rodents (squirrels, pocket mice, kangaroo rats, mice, wood rats), and predators (gray foxes, coyotes, badgers, skunks, bobcats and mountain lions). These animals are found in many vegetative types. Riparian systems within the planning area provide habitat for an extensive variety of wildlife.

Quail

The California, Gambel, and Mountain Quail (*Oriortyx picta*) occur within the planning area. Population status of all three types are ranked as good or common by California Department of Fish and Game (CDF&G) for the planning area. Population levels vary greatly from year to year depending on the amount of winter rainfall (Brocon 1978). Gambel's quail are the most restricted in the type of habitat they occupy (Desert Wash and Enriched Desert scrub) while the other varieties can be found in almost all vegetation zones.

The most essential habitat requirement for quail is free water. CDF&G records indicate that California quail may be increasing due to new water sources within the planning area. Moisture levels are considered good throughout the EIS area with Gambel's quail receiving the greatest benefit fron this condition. Potential conflicts occur between cattle grazing and quail in riparian areas due to trampling of vegetation, fouling of water, and causing erosion of stream banks.

Non-Game Birds and Raptors

Map II-8 delineates those areas important to raptors as potential breeding locations.

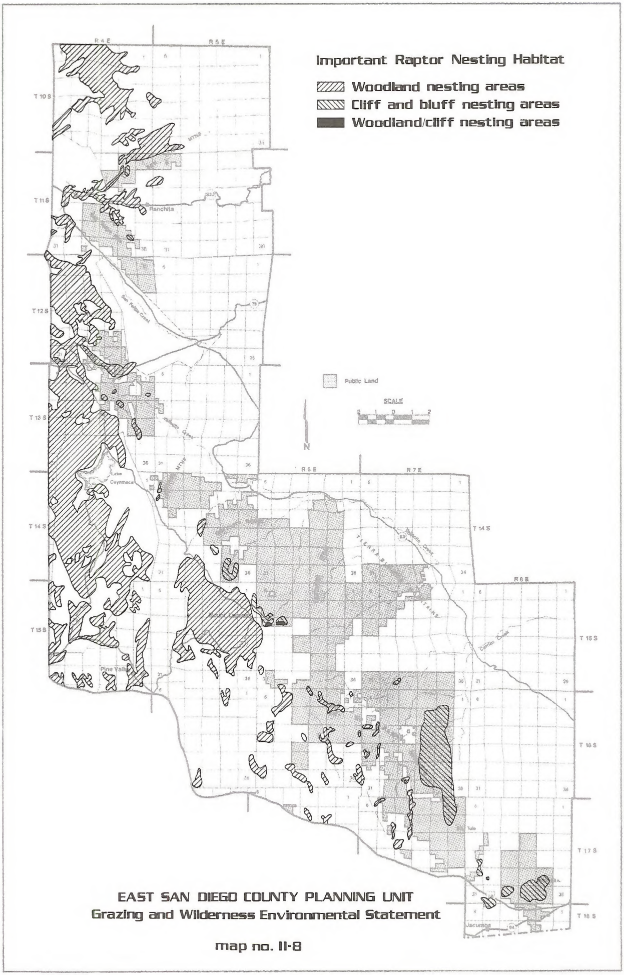
Cattle disturbance of riparian woodland habitat in Chariot and Buck Canyons potentially affects Cooper's hawk nesting areas. The major conflict involves human activity in the form of camping, shooting and other harassment of raptors at suitable nest sites within oak woodlands. Roads near cliffs and bluffs permit additional human-raptor conflicts.

Nine non-game bird species are also considered significant species. The 12 major vegetation associations that are present in the planning area provide habitat for a wide diversity of birds. Riparian areas, which provide for certain species of birds not found elsewhere in the Resource Area, such as Pepperwood Canyon, Bow Willow Canyon, Rattlesnake Spring drainage and some areas of the stream below Lost Valley Reservoir, have incurred vegetative destruction as a result of cattle trampling. Vegetative destruction of the riparian zone in Buck Canyon have resulted from cattle and mining activity. The quality and productivity of these riparian areas are being threatened as a result of these activities. It is roughly estimated that wildlife population levels and habitat condition on these riparian areas is about 10% to 20% of potential.

Reptiles and Amphibians

A diversity of amphibians and numerous reptiles are found within the planning area. Two amphibians and sixteen reptiles are listed as significant species. Populations of all significant species are not known.

Several significant reptiles are provided unique habitat in enriched desert scrub and semi-desert chaparral rocky areas. Collectors in their search for these species have degraded the habitat by overturning rocks. Other conflicts have resulted from habitat by overturning and loss due to cattle grazing and ORV use with the EIS area.



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map no. II-8

Threatened and Endangered Species

There are no Federally listed threatened or endangered species known to occur in the ESDC EIS area.

CULTURAL RESOURCES AND NATIVE AMERICAN VALUES

Archaeological Resources

A total of 421 Cultural resource sites are known within the EIS area. A large variety of prehistoric and historic resources were found within the study area. The prehistoric resources were divided into 22 site types in the Class II study. A general description of these site types is presented in Table II-13.

TABLE II-13

PREHISTORIC SITE CATEGORIES

Campsites	Areas of permanent habitation (villages), temporary camps. Would tend to be located near water near utilized resources. Would contain midden and a diversity of artificts. Could represent occupation over a long period of time.
Lithic Scatter	The occurrence of flaked stone tools and flakes, from isolates to a large dense scatter. Generally workshop areas, sometimes associated with quarries.
Milling Sites	Isolated or groups of mortars or metals, bedrock or portable, used to process some types of plant resources, not necessarily associated with the resource.
Ceramic Scatter	Broken ceramic sherds, either isolated or in quantity.
Roasting Pits	Rock-lined pits, where plant resources (mainly agave) were processed.
Rockshelters	Small rock overhangs, caves usually found in mountainous areas, may contain perishables.
Rock Art/ Rock Alignments	Rock art including pictographs and petroglyphs, stove circle, rock walls.

The total number of estimated sites within the study area is 4,268 (A.S.M. 1980). The overall site density estimate is 27.08 sites per square mile. These densities vary by allotment and should only be regarded as estimates.

The estimates of site density by grazing allotment are presented in Table II-14.

TABLE II-14

CULTURAL RESOURCES BY GRAZING ALLOTMENT

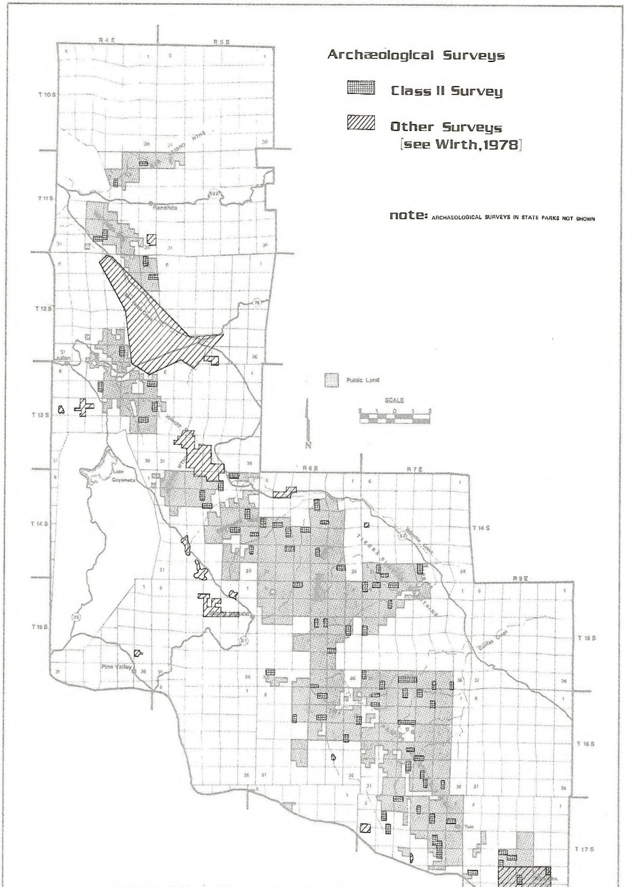
Allotment	Allotment Size (sq mi)	Known Sites	Est. Site 1/ Density (sq mi)	Total 1/ Est. Sites per Allotment
Tierra Blanca	24.8	200	23.3	800
Mt. Tule	7.4	17	22.7	168
In-Ko-Pah	25.4	18	16.1	408
Canebrake	13.8	88	52.0	717
Vallecito	23.8	33	30	714
Oriflamme	10.8	4	ISD*	ISD*
Banner Queen	6.4	9	ISD*	ISD*
Julian	.1	0	ISD*	ISD*
Cigarette Hills	.2	0	ISD*	ISD*
San Felipe	2.0	0	4.0	8
McCain Valley	.6	0	16.4	9
New Allot. A	3.3	0	ISD*	ISD*
New Allot. B	ISD*	ISD*	ISD*	ISD*

*ISD - insuffient data.
1/`Estimated from Class II inventory.

Note: Total number of sites within allotments is less than within total EIS area since not all public lands are within allotments.

Of the known sites in the EIS area, approximately 4.2% are in excellent condition, 81.3% are in good condition, 13.9% are in poor condition and 0.6% are destroyed. It is probable that many more sites have been destroyed of which we are not aware. This is not reflected in the percentage figures previously described.

Several geographical areas have been identified as particularly sensitive for prehistoric resources (Maps II-9 and II-10). These areas include Table Mountain, Canebrake and Vallecito.



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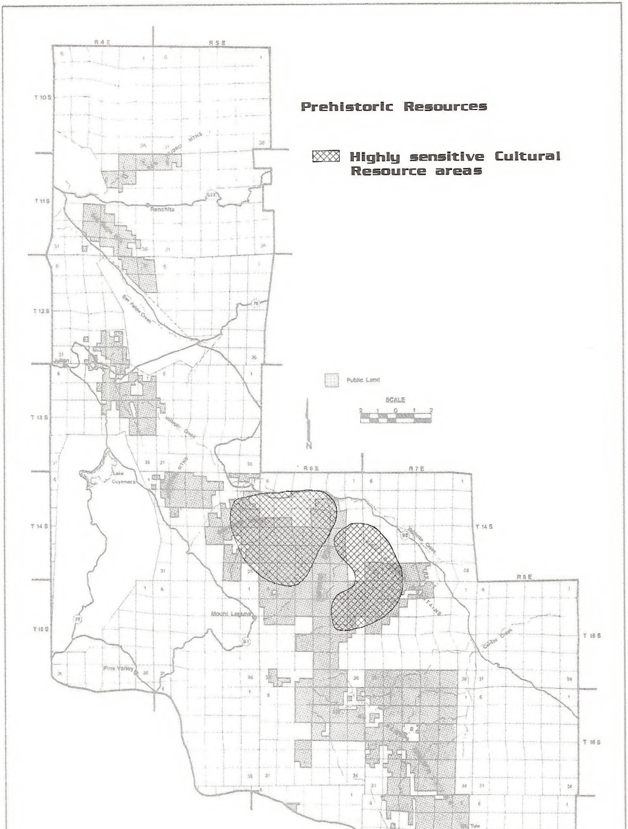
map no. II-9



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map no. II-10

Table Mountain

Recent research in the area has identified major prehistoric settlement systems and numerous sites. Because these sites can be viewed as operational systems and not just a number of individual sites, their significance in the understanding of prehistoric cultural patterns is greatly enhanced. Several of the considerations that make the Table Mountain area so significant are the diversity of biotic and lithic aboriginal resources within the area. Several of the large village sites recorded in the area are known ethnographic villages. The Table Mountain area is of highly religious significance to Native Americans.

Canebrake

There are a large number of prehistoric sites in this area. Many of these sites are special purpose (roasting pits) but there are camps associated with the major water sources. Due to the difficulty of public access to the area, most of the sites are in a good state of preservation and have been disturbed very little. This adds greatly to the value of the resources in the area.

Vallecito

This valley system and the mountains surrounding it are quite sensitive. The estimated site density is relatively high (Table II-13). Several large prehistoric campsites are known in the valley area itself, near the junction of large streams. Other campsites are known in the area of springs ringing the valley.

A major factor in site type and location is water. All sites with occupational debris (camps) were located very near major streams or springs. Most springs are very sensitive areas. Other site types such as roasting pits may be found away from water.

An analysis of prehistoric sites to plant communities showed a strong positive correlation between sites and upland desert scrub. A negative correlation was found to exist between sites and chaparral. Agave correlated very positively with roasting pits while milling sites in general did not correlate with any specific resource.

Historical Resources

There are numerous historical sites known in the EIS area. These sites represent three major historical activities: mining, grazing, and transportation.

Mining

The mining remains are concentrated in the Banner/Julian area and the Table Mountain area. The major period of activity in the Banner/Julian area started in 1869 and lasted until about 1920. The town of Banner is of major historical significance. Most of the mine sites are in poor condition. The activity in the Table Mountain area dates to within the last 40 years.

Ranching

The major economic pursuit throughout the EIS area has been ranching, beginning about the mid 1800's to the present. Considerable settlement and development has resulted from the ranching emphasis. There are few historical sites remaining in good condition although there are notable exceptions such as McCain Ranch, which is still occupied.

Ranching was the primary activity in the San Ysidro, McCain Valley, and In-Ko-Pah areas, and to a lesser extent in the Vallecito and Canebrake areas.

Transportation

Two major trails pass through the EIS area. The Southern Emigrant Trail passes through the area and has been used since 1782. The trail is now paved and called the San Felipe Valley Road. The Butterfield Stage followed the same route.

Considerable development resulted from the road and many important events happened along and because of the trail.

The other major transportation route is the east-west road, Interstate 8 from San Diego to El Centro-Yuma. Perhaps more important, historically, is the San Diego and Arizona Eastern Railroad built between 1907 and 1919. By the time the railroad was completed the automobile road had become more popular. A very impressive segment of the old railroad still exists in Carrizo Gorge and plans are currently underway to resume operations.

Native American Values

The planning unit includes territory used by several groups of Native Americans. The Mountain Cahuilla and the Kumeyaay traditionally occupied this area in recent times (prior to 1900). Territorial boundaries overlap in the northern section of this area. These groups were related to other groups who occupied territory from the Colorado River to the Pacific Ocean; for example, the language of the Kamia of Imperial Valley and Kumeyaay is similar and inter-marriage took place.

The Native Americans divided their time between the desert and the mountains. Their summer homes were in the mountains and when the frosts came they wintered in the desert. According to tradition, the most commonly occupied lands were Banner Grade, Scissors Crossing, and Mason Valley. A marsh at Scissors Crossing supplied water year round. Some grasses and wild animals also supplemented their winter food supply.

These Indians were mainly hunters and gatherers. Traditional gathering areas are found in the Laguna Mountains where they collected acorns, pinyon nuts, and other seeds. Roots, cactus fruit, mescal beans, and other foods were collected in the desert. Yucca fiber was used to weave basket and sandals.

Hunting grounds were along specific trails and were commonly used for deer, mountain sheep, rabbit and quail hunts. The mountains and desert areas are crisscrossed with these trails.

Much trade went on between the Colorado River tribes and those of southern California. The Mountain bands traded their acorns, nuts, and seeds for the fish of the river and coast. The Kamia of Imperial Valley traded their salt from the Salton Sink, and corn, watermelon and pumpkins from their farms for honey, gourds, and other items from the inland valleys.

Trails for trade and general communication crisscross this area. Major trails from the Sierra Juarez Mountains in Mexico to the Los Coyotes Reservation, Jamul to the Lagunas, and Lagunas to Mason Valley are still visible to the trained eye.

Several modern roads and recreational trails follow the old paths. The Butterfield Stage route followed the old trail from Salton Sink across Anza-Borrego to Julian. In-Ko-Pah Gorge Trail was obliterated when Interstate 8 was constructed.

There are people still alive who remember the winter home in Mason Valley or a trip to the Colorado River along one of the trails. Those who still eat acorns go to traditional gathering places in the Lagunas. The desert is still gleaned for medicinal herbs to be used by the Medicine Man (Shaman) for healing the sick, and for food used to supplement the present diet of others in the bands.

At present, McCain Valley is being used extensively by ORVs. This has been a cause of concern to Native Americans in the area. Several complained that the area contains cremation sites as well as burial sites and these are being desecrated by the indiscriminate use of the area by ORV'ers.

RECREATION

Introduction

The ESDC planning unit, excluding McCain Valley and Table Mountain, does not receive heavy usage. Field inspections, public workshops, and hearings indicate visitation is low and recreational activities such as rockhounding, backpacking, camping, and hiking have low impacts upon the resources. Extremely limited legal access to public lands and rough terrain have combined to inhibit visitation.

McCain Valley with its 3 developed campgrounds and access road, along with Table Mountain are the heaviest used units of the planning area. The high recreational potential of this area (portions of the Tierra Blanca, In-Ko-Pah, Mt. Tule and proposed allotment B) led to the withdrawal of 45,052 acres for the McCain and Jacumba National Cooperative Land and Wildlife Management Areas in 1961 and 1962 respectively. This withdrawal maintained the lands in the public domain and provided for protecting and improving wildlife habitat for hunting while still being available for general recreational use.

Use Estimates

Recreation visitor use, in Recreation Use Days (RUD) for the Eastern San Diego County Planning Units is shown on Table II-15.

TABLE II-15

Recreation Visitor Use	RUD
Bureau of Land Management	
McCain Valley	32,230
Cleveland National Forest	
Laguna Mountain Recreation Area	736,240
California Department of Parks and Recreation	
Anza-Borrego Desert State Park	835,427
Cuyamaca Rancho State Park	500,000
San Diego County (estimated)	
Department of Parks and Recreation	105,311
Total Recreation Use Days	2,209,208

Use Seasons

Recreational use within the planning unit tends to be highly seasonal due to the region's diversity of physiographic characteristics. Seasonal temperatures appear to be the most important factor in influencing visitation. Visitation in McCain Valley reaches its peak during the months of May through October.

Use Trends

Visitation in McCain Valley increased at an average rate of 19.2% between FY 1966 and FY 1975 and then decreased during FYs 77 and 78. Use during 1977 and 1978 was relatively constant. Peak reported visitor use for McCain Valley was reached in 1975 with approximately 38,000 RUDs.

Off-Road Vehicle (ORV) Use

Off-road vehicles are required to use a combination of designated and existing roads and trails. Eastern McCain Valley and the Carrizo Gorge subunits (portions of the Tierra Blanca and In-Ko-Pah allotments) have been closed to ORV use because of ORV conflicts with wildlife and ranchers. There are indications of ORV use having detrimental effects upon bighorn sheep, a State of California protected mammal. In the remainder of ESDC, ORVs are required to use existing roads and trails. Except for Table Mountain (part of the Tierra Blanca allotment) usage is low and even then it is a means for carrying out other activities (e.g., rockhounding).

Sightseeing

Most of ESDC is not available for sightseeing because of rough terrain and extremely limited legal access. In spite of these limitations, there is a diversity of attractions. Possibly the most desired and most elusive is a view of the Peninsular bighorn sheep in the Carrizo Gorge. The Julian subunit has a colorful history of gold mining, and includes the Banner Grade Toll Road from which the Elsinore Fault can be seen. From Sacotone Springs in the Mt. Tule allotment, the spectacular view of the Carrlzo Gorge, the historic Carrizo Corridor, and the San Diego and Arizona Eastern Railroad can be seen. During spring, summer, and fall, visitors come to ESDC to see a bounty of wildflowers.

Hunting

Water is the most limiting factor in producing good hunting areas in the ESDC planning area. Vallecito and Canebrake allotments with their streams provide the best deer and upland game hunting in the region. Gambel's Quail, Mountain quail, Audubon cottontail, bush rabbit, and mourning doves are the main upland game species. During dry years the planning area provides marginal success for hunting.

Hiking and Equestrian Use

The California Riding and Hiking Trail and both the present temporary route and future permanent route of the Pacific Crest Trail are in the Julian subunit (the Banner Queen and Oriflamme allotments). The Vallecito, Canebrake, and portions of the Tierra Blanca, In-Ko-Pah, Mt. Tule, and San Ysidro subunit allotments show good potential for trails but none have been established. The San Felipe Hills subunits, and the Oriflamme allotment have limited value for hiking or equestrian use. Both possess serious hazards, low scenic qualities, and/or little available water.

Rockhounding

Rockhunting potential in Vallecito, most of McCain Valley (Tierra Blanca allotment), and Carrizo Gorge (In-Ko-Pah allotment) subunits is unknown. Active rockhounding occurs in southeast McCain Valley (In-Ko-Pah allotment), southern Carrizo Gorge (Mt. Tule allotment), and the Table Mountain (Tierra Blanca allotment) subunits.

Developed Recreation Sites

The only developed Bureau recreation sites are in the McCain Valley subunit (Tierra Blanca allotment). Together, White Arrow, Cottonwood, and Lark Canyon campgrounds provide 46 camping units. Facility development levels as shown in Table II-16.

TABLE II-16

MCCAIN VALLEY CAMPGROUND DEVELOPMENTS

Campground	No. of Units	Fee Charged	Occupancy Limit	Toilets (Double Seat Pit Type)	Trash Pickup	Water Provided	1977 Recreation Use Days
Lark Canyon	8	$1/day	14 day	2	yes	yes	5,076
White Arrow	7	Non	14 day	1	yes	no	1,251
Cottonwood	31	$1/day	14 day	4	yes	yes	14,686

The entire planning unit appears to be basically unchanging in terms of landscape character and scenic quality. Much of the reason for this is rough terrain and lack of water, which act as hindrances to development. However, off road vehicle use has increased with time and its effects have proliferated in the McCain Valley area in the past 10 years.

VISUAL RESOURCES

Two distinct Landscape Provinces of California are found within the ESDC Planning Unit: the Southwest Mountain and Valley Province and the Desert and Desert Mountain Province.

The Southwest Mountain and Valley Province occur mainly in the western and northern portions of the unit. It is best exemplified by the Julian/Banner and McCain Valley regions, with topography that varies from steep and rolling foothills that are dissected by numerous drainages, to boulder-strewn hillsides blanketed by a thick cover of chaparral in the drier habitats to an oak-woodland in the moister valley bottoms.

In contrast, Carrizo Gorge, within the Desert and Desert Mountain Landscape Province, consists of sparsely covered rocky slopes which are split by minor gullies and tortuous valleys, dominated by a deep gorge leading to a sandy wash lined with smoke trees and mesquite. This is evident but not as dramatic throughout the remainder of the province, which mainly occurs in the southern and eastern portions of the unit.

There is no distinct line separating these two provinces. A transitional zone extends from the upper slopes of the higher mountains, characterized by Pine Forest and Chaparral, through stands of Pinyon Juniper on the lower slopes and bajadas of Shadscale, finally blending into the Creosote Scrub of the valley bottom desert floor.

The entire planning unit appears to be basically unchanging in terms of landscape character and scenic quality. Much of the reason for this is rough terrain and lack of water, which act as hindrances to development. However, off-road vehicle use has increased with time and its effects have proliferated in the McCain Valley area in the past ten years.

VRM classes have been determined for the planning unit. Three of the five possible VRM classes, II, III, and IV, occur within the planning unit (see Map II-11). In VRM class II areas, changes caused by a management activity may not be evident in the landscape. Changes in VRM class III areas may be evident but should remain subordinate to the existing landscape. In VRM class IV areas, changes may be dominant and attract attention, but should borrow from the natural elements of the landscape.

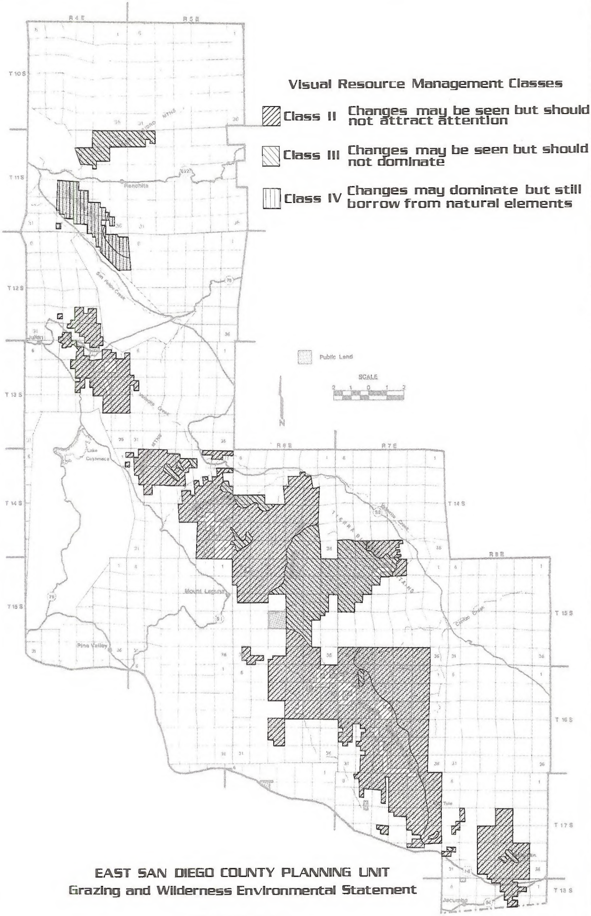
WILDERNESS

Introduction

Three major California population centers are considered relevant to the wilderness study areas in this EIS. They are San Diego, San Bernardino, and Los Angeles. For the purposes of this document all of the study areas may be considered to be the same distance from these cities.

POPULATION CENTERS

CITY	CITY POPULATION (1979)	PLANNING AREA (MILES)	COUNTY POPULATION (1979)
San Diego	826,000	60	1,800,000
San Bernardino	107,000	95	878,000
Los Angeles	2,800,000	125	7,125,000


Visual Resource Management Classes
▨ Class II Changes may be seen but should not attract attention
▨ Class III Changes may be seen but should not dominate
▥ Class IV Changes may dominate but still borrow from natural elements
Public Land
SCALE
N
R 4 E
R 5 E
R 6 E
R 7 E
R 8 E
T 10 S
T 11 S
T 12 S
T 13 S
T 14 S
T 15 S
T 16 S
T 17 S
T 18 S
Ranchita
San Felipe Creek
Julian
Lake Cuyamaca
Mount Laguna
Pine Valley
Tule
Jacumba

EAST SAN DIEGO COUNTY PLANNING UNIT
Grazing and Wilderness Environmental Statement

map no. II-11

Within a travel radius of these cities equal to the distance from the ESDC planning area are several designated wilderness areas: San Rafael Wilderness (Los Padres N.F.) 143,000 acres; San Gabriel Wilderness (Angeles N.F.) 36,000 acres; San Gorgonio Wilderness (San Bernardino N.F.) 35,000 acres; Cucamunga Wilderness (San Bernardino N.F.) 9,000 acres; San Jacinto Wilderness (San Bernardino N.F.) 22,000 acres; Aqua Tibia Wilderness (Cleveland N.F.) 16,000 acres; Santa Rosa Mountains State Wilderness (Anza-Borrego Desert State Park) 87,000 acres; San Jacinto Wilderness State Park 10,000 acres, and Joshua Tree National Monument Wilderness 430,000 acres.

In addition to the above designated wilderness areas, a larger area is under study in this region by BLM, Forest Service, and California Department of Parks and Recreation for possible future designation. Furthermore, 223,700 acres within the Anza-Borrego Desert State Park are being considered for inclusion in the State of California's Wilderness System (see Map I-7)

The Bureau of Land Management's wilderness study areas described below, were identified through the Intensive Wilderness Inventory process for areas outside the California Desert Conservation Area. The inventory narratives are contained in Appendix D. The process is described in the BLM Wilderness Inventory Handbook (1978).

San Ysidro Mountain (CA-060-022)

The study area consists of a narrow ribbon of land that includes San Ysidro Mountains' ridgeline and a south facing slope that over looks the community of Ranchita and Highway S-22. The terrain is steep and covered with desert scrub at the bottom, chaparral on higher slopes, and pines at the summit. The northeastern portion has been burned and required tree plantings to encourage regeneration of the pine forest have been completed. Current recreational use of this unit is restricted to hiking and hunting; use occurs infrequently. Interest has been expressed by Anza-Borrego Desert State Park for constructing a hiking trail across the parcel to provide public access to the Hellhole Flats within the Park's 46,000-acre Sheep Canyon Roadless Area. Such a trail could greatly increase visitation.

The study area contains one unpatented mine. Mineral surveys indicate a low probability for mineral development. In the past, mining has occurred on adjacent lands. There is currently one unpatented mining claim in the eastern portion of the study area.

The northeastern portion of the mountain shows considerable signs of grazing trespass.

Although no archaeological sites were recorded in this area by the Class II inventory one would expect that major camps could be located near the primary drainages although the vegetation suggests that relatively few special purpose sites would be located within the area. There are no sites listed on the National Register within the WSA.

Management options for the study area are extremely limited. Generally, the area is only a mile wide, but the steepness of the south-facing slope will naturally concentrate visitors to a quarter-mile ribbon running along the ridgeline. Only a limited number of small parties could use the area and still maintain an opportunity for solitude. Management for a solitude experience will preclude the use of the area as an access route to Hellhole Flats and Sheep Canyon Roadless Area. If use will increase, there would be difficulties in protecting the wilderness resources from the impacts of users in such a restricted area. It is unlikely that sanitary facilities will be provided that meet U.S. Public Health Service and San Diego Health and Planning codes. Camping is hazardous because of periodic strong winds and lightning storms. Providing enforcement, monitoring, maintenance, and rescue services on a regular basis is impossible. Travel time from El Centro, the closest BLM office, is 2.5 hours each way. Little time will remain to hike into the study area and perform any management functions.

San Felipe Hills (CA-060-023)

The San Felipe Hills WSA is a ridge running 6.5 miles along a northwesterly axis. The area width varies from .5 to 1.5 miles. It lies between Highway S-2 and the Grapevine-Hoover Canyon Road. The steep-sided ridge is predominantly covered by a dense chaparral ecotype, but the lower elevations contain a sparse desert scrub ecotype. The entire area has been burned repeatedly. The naturalness of the area has been impaired by the existence of trails and old firelines. These trails currently erode after every storm, but there are indicators that vegetation is slowly invading these trails. Current recreational use of the area includes hiking, hunting, vehicle camping, rockhounding, and some off-road vehicle travel. Use is sporadic and infrequent.

Mineral surveys indicate a low probability for mineral development. Minor evidence does exist of past prospecting, but no mining claims within the WSA are known to have been filed with the BLM.

A grazing lease currently exists for the southern portion of the study area. Lack of water and dense stands of chaparral are major restrictions to grazing. Some grazing trespass is believed to occur within the study area.

The vegetative type of the area may indicate that a few archaeological sites occur. The water drainages, the remains of prehistoric campsites and special purpose sites could be present. There are four known sites in the WSA, none of which are listed on the National Register.

The San Felipe Hills has management problems similar to San Ysidro Mountain. The area is 1.5 hours from the El Centro Resource Area Office. It would be impossible to provide enforcement, monitoring, maintenance, and rescue services on a regular basis.

The rehabilitation of firebreakes is a major problem. Erosion continues to occur on the old firebreaks. The chaparral vegetation has not taken root in these fuelbreaks. Although the branches of plants bordering the breakes have slowly started to reach into the vacant space, it has been several years since the last fire. Based on the area's fire history, new fires will occur before complete revegetation occurs. The topography concentrates fire control efforts to the same fuelbreaks. Therefore, the fuelbreaks will remain or be reestablished. In addition, the lack of legal access is a severe limitation upon rehabilitation efforts in specific and upon management in general. The ability of the public to use this WSA legally is similarly limited.

Sawtooth Mountains (CA-060-024-A, B, & C)

The Sawtooth Mountains includes three WSAs that are separated only by one-lane dirt roads. They share the same geographic areas, the same problems and the same recommendations under the MFP. Therefore, they will be considered as one contiguous unit. The term "Sawtooth Mountains" is used inclusively for the three WSAs.

The Sawtooth Mountains are best described by the word "diverse." Steep, rugged mountain ridges extend like fingers from the Laguna Plateau into the desert to form the flat alluvial valleys known as Canebrake, Inner Pasture, and Vallecito. The latter contains Potrero and Storm Canyons. The higher elevations support a dense chaparral vegetation and the lower valleys and ridges are sparsely covered with desert scrub. In between are unique mixtures of both ecosystems.

The diversity in topography and vegetation supports a variety of wildlife species that includes mule deer, Gambel, California and Mountain quail, Audubon cottontail, Brush rabbit and Black-tailed hare, desert horned lizard, banded rock lizard and small scaled lizards. Historically, the area was part of the range and had supported Peninsular bighorn sheep.

Most of the WSA is included in the Oriflamme, Vallecito or Canebrake grazing allotments. Associated with the grazing operations are fences, spring developments, water pipelines and water troughs. Associated with the water developments are "cherry-stemmed" roads into Canebrake, Inner Pasture, and Portrero, and Storm Canyons (see Map I-7).

Current recreational activities include backpacking, camping and hunting. The steep slopes have confined these activities to the valley bottoms. The use level is very low because vehicles must cross private land to gain access to the valleys. The private landowners, in response to past vandalism, allow only a few individuals to cross their land.

Management options for providing various levels of wilderness quality are reflected in each alternative. The reintroduction of the Peninsular bighorn sheep is of high priority. The protection of their habitat requires wilderness or near-wilderness management. Protecting the bighorn sheep habitat limits the possible variations in size of suitable areas.

Mineral surveys indicate a low probability for mineral development. No mining claims within the Sawtooth Mountains are known to have been filed with the BLM.

There are numerous recorded archaeological sites within the WSA. A significant portion of these sites would be roasting pits associated with desert scrub. One would also expect a number of campsites associated with springs and other major water sources. Milling sites are found in the valley areas. No sites are listed on the National Register within the WSA.

Adjacent to the Sawtooth Mountains is the proposed 10,000-acre Sombrero Peak Wilderness Area in Anza Borrego Desert State Park. Current and future management of the Sawtooths requires coordination with the California Department of Parks and Recreation. Similar coordination is required with the Cleveland National Forest. Approximately 2,000 acres of National Forest will require joint review by USFS and BLM. These adjacent lands combine to provide a unique opportunity for primitive recreation in an area that transcends from the coastal mountains to the low deserts. Sombrero Peak Roadless Area is also contiguous with Carrizo Gorge WSA (14,573 acres).

Carrizo Gorge (CA-060-025)

The study area has an eastern aspect of steep canyons and mountainsides which form one edge of Carrizo Gorge (the gorge bottom is located in Anza-Borrego Desert State Park). The topography provides an important defense for the herd of Peninsular bighorn sheep in the area. As the elevation increases, the vegetation changes from desert scrub to chaparral.

The area is used for hiking, nature studies, and photography. The two main attractions for visitors are the possibility of seeing a bighorn sheep and the palm groves in Bow Willow Palms Natural Area. The WSA is closed to off-road vehicles and the primary access is from the east by way of Anza Borrego Desert State Park.

Grazing occurs in portions of the area as part of the In-Ko-Pah and Mount Tule allotments. A few water developments exist in the area, but they are substantially unnoticeable. The remains of an abandoned line shack are located in and provide the name for Rockhouse Canyon.

Mineral surveys indicate low probabilities for mineral development. No mining claims within the Carrizo Gorge WSA are known to have been filed with the BLM.

Archaeological sites could be expected at the springs and perhaps along other major water sources. Due to the vegetation type, roasting pits should not be numerous. There are no sites listed on the National Register within the WSA.

The California Resources Agency has proposed a 12,500-acre Jacumba Mountain Wilderness that will be contiguous on the east. Past and present management coordination with the Department of Parks and Recreation will be continued.

Three to four spectacular vistas have been identified to the west of the study area. It has been proposed that they be developed for interpreting the history of Carrizo Gorge. Such developments may require the use of two acres currently within the study area.

The entire study area contains essential habitat for the Peninsular bighorn sheep herd whose population stability is marginal. Wilderness is one means to protect the entire sheep habitat.

Table Mountain (CA-060-026)

The Table Mountain WSA lies north of Table Mountain proper. The main topographic feature is a ridgeline shoulder of Jacumba Mountain. The rolling mountainous character of the area is typical of the region. The topography is not as unique and dramatic as the steep mountains forming Carrizo Gorge in the nearby proposed Jacumba Mountains Wilderness portion of Anza-Borrego Desert State Park.

Mineral surveys indicate a low probability for mineral development. Minor evidence does exist of past prospecting, but no mining claims within the WSA are known to have been filed with the BLM.

The Tierra Blanca grazing lease includes the WSA. The amount of grazing use is dependent upon the rainfall and resultant vegetation.

A limited number of campsites, lithic scatters and roasting pits would be found in the area, although no survey was conducted. No major streams are within the study area so major village sites would not be expected. No sites are listed on the National Register within the WSA. Major cultural resources are located on Table Mountain proper south of the WSA.

Management of the area for providing a quality wilderness experience is impossible. The number of visitors will have to be restricted to maintain a degree of solitude. Legal access for the public does not exist. This lack of access severely restricts the BLM's ability to monitor use and enforce regulations. Enforcement of the prohibition of ORVs within the WSA would be extremely difficult because of the existing use in the southern portion of the study acrea. In fact, an effective visible profile enforcement program has a high potential of eroding the quality of a visitor's wilderness experience.

SOCIO-ECONOMICS

Introduction

The planning area is within San Diego County which has a population of about 1.8 million people which has resulted in high public use and demand on the area. Most of the county's population resides in the coastal area approximately 60 highway miles from the planning area. However, population of the planning area itself is estimated to be 4,000. Within and adjacent to the planning area there are only small communities.

Communities adjacent to the ESDC Planning Area include:

	Population
Julian	1,495
Boulevard	415
Guatay	225
Descanso	532
Mt. Laguna	650
Live Oak Springs	Unknown
Cuyamaca	Unknown
Ranchita	172

Three Indian Reservations lie within the planning area: Los Coyotes, Cuyapaipe, and Manzanita. These reservations are all immediately adjacent to public lands. To the west of the planning area is the Santa Ysabel Indian Reservation. Precise figures on the Indian population within planning area are not available at this time but are believed to be small in number.

Economically, the public demand and use in the area are dominated by outdoor recreation and cattle ranching. It is also a popular area for retirement and for location of second homes. Much of this area was mined for gold in the past but there is little active mining now. Overall, tourist activity is determined by destinations such as the Anza-Borrego Desert State Park to the east, the settlement of Julian and Cuyamaca Rancho State Park to the west, and the Laguna Recreation Area in the Cleveland National Forest in the southern portion of the planning area. Interstate Highway 8 serves as a major thoroughfare, and provides the main access at the south edge. It is also a source of income from people traveling between San Diego, El Centro, Yuma, and points east. Travel through the area is also influenced by the presence of Mexico only ten miles to the south.

The 11 livestock allotments provide about 2% of the forage for beef cattle in San Diego County. Most of the ranchers using these allotments run cow-calf operations where a constant number of breeding cows are kept year-round and calves are sold when less than one year old. This type of ranch requires a reliable source of forage at all seasons of the year. It is not well adapted to utilizing the additional forage available in an exceptionally good year.

Some operators graze steers. Usually these operators do not need a seasonally balanced forage supply because the steers are kept for less than a year. The number of animals grazed by these operators varies from year to year depending on the market for steers and the availability of forage.

Several of the livestock operators obtain a significant share (25%) of their total forage supply from these allotments. However, only one operator is both primarily dependent upon livestock income and upon a share of forage from a BLM allotment.

The ranchers presently licensed to use these allotments have been gathered into three groups on the basis of size of herd. The groups will be referred to as Large and Medium Operators, Small Operators, and Minor Allotments.

Large and Medium Operators

The four operators in this category have herds ranging from 300 to 2,600 head. These four operators have 58% of the total licensed used. Two of these operators derive their entire income from the livestock operation.

The other two operators are dependent upon other income sources. Two of the operators graze steers, the other two are cow-calf operators. One operator obtains about 25% of his feed from public land, and the other obtains about 4% to 7%.

Small Operators

The four operators in this category have herds ranging from 30 to 150 head. Their share of the BLM forage is 41%. None of these operators is entirely dependent upon his livestock enterprise for his income. Livestock operators of this size are at best marginal and are usually part of a property managed for its residential or future real estate value. All of these ranches are cow-calf operations. These operators obtain about 25% to 70% of their forage from public land, making them relatively dependent upon BLM for forage but not for income. The operator who obtains 70% of his feed from BLM derives less than 10% of his income from the livestock operation.

Minor Operators

The three operators in this category have about 1% of the BLM forage, a total of only 47 AUMs out of 4,925. The BLM forage on these allotments is trivial to the operators other than as convenience to avoid being charged with trespass. These operators do not necessarily use the forage every year.

CHAPTER 3

ENVIRONMENTAL CONSEQUENCES

Chapter III

ENVIRONMENTAL CONSEQUENCES

GRAZING ALTERNATIVES

IMPACTS OF THE ALTERNATIVES

Analysis of impacts centers chiefly upon those resources described in Chapter II which would receive the most significant impacts. Resources which will not be affected will not be addressed in this chapter. Resources which were found not to be affected were Climate and Air Quality, Minerals, and Forestry. Additionally, where impacts for resources were found to be similar under subsequent alternative analysis, those sections reference previous impact analysis. In some cases limitation on impact assessment occurs due to lack of data or where comparison of previous studies were not appropriate. In such instances, knowledge of the area and professional judgment were relied upon to infer environmental consequences of management alternatives. A more complete description of such limitations can be found in the data base (Chapter II), in the impact assessment, and in the appendices.

Grazing Alternative 1: No Grazing

Water Resources

Elimination of the present livestock water consumption rates of 0.5 acre feet per year will not result in a significant increase in water quantity; since this is less than .01% of the perennial yield (4,790 acre-feet).

The increase in vegetative cover (see Impacts to Soils) would result in a reduction in surface runoff and an increase in evapo-transpiration and infiltration rates. The subsequent decrease in sedimentation would result in improved water quality.

Soils

Eliminating livestock grazing will result in an increase in total vegetative ground cover from the present 48% to a projected 63% (see Table III-1). This will provide a significantly greater degree of protection for the soil base. Impacts due to the concentration of livestock around fences and water sources will cease, greatly reducing soil compaction. This will substantially reduce erosion potential.

TABLE III-1

GRAZING ALTERNATIVES

WATERSHED AREAS	1:NO GRAZING	2:INTENSIVE USE	3:PROPOSED ACTION	4:LIMITED USE	5:NO ACTION	AVERAGE % INCREASE/WATERSHED
040 Lake Henshaw	27% Improvement	23% Improvement	24% Improvement	15% Improvement	Degeneration 19%	17.5% Improvement
042 Oriflamme Borrego	32% Improvement	30% Improvement	53% Improvement	17% Improvement	Degeneration 39%	23% Improvement
043 McCain Valley	35% Improvement	29% Improvement	27% Improvement	10% Improvement	Degeneration 68%	8.2% Improvement
Average % Veg improvement or degeneration/ alternative	31% Improvement	27% Improvement	35% Improvement	14% Improvement	Degeneration 42%	Not Applicable
Total projected Ground cover	63% Improvement	61% Improvement	65% Improvement	55% Improvement	Degeneraton 30%	Not Applicable

This table represents the percent of surface cover that improves or degenerates with different grazing management alternatives by using Soil Surface Factor data taken May 1974.

Vegetation

Condition and Trend: Under grazing alternative 1, all habitat types within various vegetative communities would move towards the climax stage of ecological succession. This movement reflects the overall long term impact with some benefit to general plant composition, vegetative cover, and condition for many areas. At the same time, it would result in an overall negative impact in terms of forage production for large areas currently being kept in low productivity due to encroachment of various brush and shrub species. It is important to note that in many areas, with the predominant chaparral species present, composition levels of perennial grasses are already low. Under grazing alternative 1 treatments, existing stands of dense shrubs would out-compete perennial grass species. Open stands of brush left uncontrolled in chaparral communities will develop into a full cover in five to ten years, eventually resulting in the replacement of grass if not adequately controlled (USDA 1967). However, although the no-grazing alternative will have some negative impacts on vegetation as forage, it will have definite positive impacts on vegetation as a natural resource on its own. Vegetation as a natural ecosystem will benefit from this alternative over the long run.

As shown in Table III-2, although there would be an increase of 4% (2,930 acres) in the good range condition class, there is an overall decrease of 7% (4,555 acres) in the fair range condition class and an increase from 34% to 36% for an overall net increase of 2% (1,625 acres) in the poor range condition class. Allotments being affected adversely in the fair class are San Felipe, Cigarette Hills, Julian, Banner Queen, Oriflamme, Tierra Blanca, Mt. Tule, and McCain Valley. Furthermore, the existing seeding project in the Oriflamme allotment will be invaded by undesirable shrub species in 20 years resulting in poor condition for this 800-acre area.

The remaining allotments (In-Ko-Pah, Vallecito and Canebrake) fall into plant communities of the desert type. These allotments are generally in poor range condition. Composition of perennial grasses is generally low (1%-5%). However, these are not true desert allotments, being transitional between mediterranean and desert climatic zones. Furthermore, changes in operator management in recent years have initiated an upward trend in range condition. This trend will continue and will result in some areas, particularly much of the enriched desert scrub (alluvial) and semi-desert chaparral plant communities, improving a condition class.

The overall results of the no grazing alternative would be a declining trend, resulting in an increase in the acres of poor condition range.

TABLE III-2

GRAZING ALTERNATIVE 1
PROJECTED RANGE CONDITION BY ALLOTMENT

ALLOTMENT	EXCELLENT	GOOD	FAIR	POOR	UNSUITABLE (STEEP ROCKLAND)	TOTAL
1) Tierra Blanca						
A) McCain Valley	0	1,750	908	5,440	2,030	10,128
B) Table Mountain	0	2,080	1,745	890	965	5,680
2) McCain Valley	0	0	0	360	0	360
3) San Felipe	0	0	0	1,062	223	1,285
4) Mt. Tule	0	0	2,610	1,800	300	4,710
5) In-Ko-Pah	0	1,660	3,530	3,650	7,443	16,283
6) Banner Queen	0	80	0	2,890	2,153	4,123
7) Canebrake	0	100	1,715	2,493	4,528	8,836
8) Vallecito	0	0	1,500	6,675	7,038	15,213
9) Oriflamme	0	80	560	1,400	4,873	6,913
10) Cigarette Hills	0	0	0	70	50	120
11) Julian	0	0	0	26	14	40
Projected-Total Acres	0	5,750	12,568	26,756	28,617	73,691
-Percent of Planning Unit	0	8%	17%	36%	38%	100%
Present-Total Acres	0	2,820	17,123	25,131	28,617	73,691
-Percent of Planning Unit	0	4%	24%	34%	38%	100%

Forage Production: Overall, livestock forage production would decrease to 3,175 AUM by the year 2001 compared to the present production of 3,393 AUMs. Some areas with fair stands of perennial grasses would increase in plant vigor and seed production which would provide an increase in AUMs (see Table I-2, Chapter I for those allotments expected to increase). Any adverse impacts due to forage removal by livestock in riparian areas, would be eliminated. Most allotments, however, would remain in poor range condition or move from a fair to poor range condition because of expected increases in density of undesirable shrubs (chamise, sumac, scrub oak) because no land treatments will be initiated. (See Table I-3 for allotments expected to decrease in production.

Range Developments and Facilities: Approximately 41 miles of fencing would be required to fence out private lands where grazing occurs adjacent to public land. This would result in a total disturbance of about 40 acres of vegetation to install the fencing and would be relatively slight in negative impacts on vegetative production for this disturbed area.

Threatened and Endangered Plant Species: Removal of livestock grazing eliminates the possibility of trampling and consumption of any species.

Wildlife

Predicted changes in wildlife were based on professional judgment considering such factors as changes in forage availablity and competition with livestock for water and space. Important considerations used in the analysis of individual species or species groups in all alternatives were as follows:

(a) Bighorn Sheep: Very sensitive to the presence of cattle and harrassment by man.

(b) Mule deer: Currently low in number. Changes in forage production and livestock grazing will cause only minor variations in the more basic trend.

(c) Riparian species: Will increase in abundance in proportion to the amount of riparian habitat that is allowed to reach its full potential. Livestock reductions and changes in season are important but not the only factor in improving riparian habitats.

(d) Quail: All three species in the study are controlled primarily by the amount of winter rainfall (Brown 1978). Quail are mentioned only in Table I - 21 since they would not be impacted by the alternatives except locally near riparian areas.

(e) Endangered species: None present.

Bighorn Sheep: Under grazing alternative 1, No Grazing, bighorn sheep would increase to about 300 head within the study area by the year 2001. This would result from range expansion and increased carrying capacity. There would be an approximate doubling of occupied habitat primarily through reintroduction and expansion into historic range in Canebrake, Vallecito and Oriflamme allotments. Although the availability of perennial grasses would decrease in the Oriflamme and Mt. Tule allotments, there would be modest increase in perennials in the currently important In-Ko-Pah and potentially important Canebrake and Vallicito allotments. (Table I-1). Competition with livestock would be eliminated allowing bighorn to fully use water sources, grazing areas near water source, and relatively flat areas of moderate slope currently heavily used by livestock.

The ability of the bighorn population to increase (i.e., for lambs to survive a year and thus be recruited into the population) is apparently low due to the inability of young animals to compete successfully (Weaver, R. 1980, pers. comm.). Elimination of grazing along with a reduction of human harrassment resulting from road closures, would probably allow the population to increase (Wilson, 1968). However, the increase would be slow due to recruitment difficulties (Weaver, R. 1980, pers. comm.).

It is Bureau policy (BLM Manual 6840) to manage and/or conserve the crucial habitat of state-listed animals such as bighorn to minimize the need for listing in the future. Alternative one will strongly conform to this plicy by eliminating all competition with livestock, providing for expansion of range, and promoting a three-fold increase in numbers.

Mule Deer: Mule deer populations will not change significantly. Total forage production would decline about 6% by the year 2001. (Table I-1). This would be somewhat compensated for by improved conditions in key riparian areas and removal of livestock grazing in riparian habitat.

Deer are found primarily in the chamise chaparral and mixed chaparral habitats (31% of the area, 22,146 acres) throughout the study area. Overall habitat conditions are presently poor to fair over the short term but over the long term (20 years) deer habitat suitability will decline due to lack of grasses, palatable forbs, and shrubs with the expansion of extremely dense stands of chaparral and chamise shrubs (Appendix C). In the area currently included in the Tierra Blanca allotment there will be continued general public access and intensive recreation use occurring, which has affected deer use of the areas. These areas receive high levels and persistent recreation use throughout the year and general improvement in habitat conditions is not expected. Therefore, moderate adverse impacts contributing to low density of deer is expected to continue.

Other Wildlife: Many wildlife species will benefit from the recovery of about 12 miles of riparian habitat. Potential impacts on the Cooper's Hawk in Buck and Chariot Canyons will be reduced or eliminated. Species such as the two-striped garter snake and large blotched salamander will show increases due to reversal of current habitat loss. Populations of such species as the Long Eared Owl and Warbling Vireo would be increased several fold (Johnson and Jones, 1977). Other species such as the Willow Flycatchers and Bell's Vireo (a proposed sensitive species) might establish breeding populations in the area if sufficient willow habitat is restored.

Many wildlife species such as quail will also benefit from the improved quality and increased quantity of water available for wildlife due to the elimination of water use by livestock.

Cultural Resources and Native American Values

By removing livestock, impacts of trampling would be eliminated. A gradual revegetation of certain areas could reduce erosion helping to stabilize some resources. General access may be restricted reducing impacts from vandalism and ORV use.

Recreation

The termination of public grazing leases under grazing alternative 1 will have limited overall positive impacts on some recreational opportunities in the study area. On five allotments (Canebrake, Vallecito, Oriflamme, Cigarette Hills, and Julian), there will be virtually no affect on recreation access for hunting because these allotments currently restrict most general public access as access is privately owned and available only through permission. In the other six allotments: Tierra Blanca, In-Ko-Pah, San Felipe, Banner Queen, McCain Valley, and Mt. Tule recreation would be slightly affected due to possibility of limited access being closed from livestock operators closing access across portions of their private lands.

There will be some beneficial impacts attributed to increased improvements in forage for livestock. Current forage consumed by livestock would become available for deer, quail and small game which initially will benefit by increased forage and should increase hunting opportunities. Similarly, increased opportunity for bighorn sheep sightings due to decreased human activity, better habitat conditions, and removal of livestock will occur.

There will be little change in ORV, hiking and camping opportunities from elimination of grazing. Areas currently affording these opportunities such as Tierra Blanca, In-Ko-Pah, and Banner Queen allotments will have some positive impacts due to removal of conflicts with livestock on recreation use areas.

Visual Resources

Implementation of grazing alternative 1 would result in negligible visual contrasts throughout most of the EIS area. Only in the Oriflamme Mountain region will moderate to strong vegetative line, color and textural contrasts occur since an existing land treatment area will not be rehabilitated. Currently, the treatment area is virtually devoid of vegetative cover and contrasts sharply with the dark green, evenly aged chaparral which surrounds it. The treatment is in direct view of scenic Highway S1 (the Sunrise Highway).

Socioeconomics

The Socioeconomics section deals with socioeconomic changes resulting from changing livestock grazing on public lands. Significance of impacts was evaluated in terms of changes to the livestock operator's income. This included consideration of the proportion of feed coming from the BLM allotment, and proportion of the operator's income derived from the livestock enterprise. In most cases, public land is mixed with private lands owned by the lessees.

The overall impact on local communities was evaluated by considering whether total elimination of grazing on public lands would remove a significant portion of either the population or local income sources. This was done on the basis of professional judgment and the income dependency analysis outlined above.

Though grazing alternative 1 would reduce the amount of livestock raised in the planning area, its effect on the community would be slight. No operations which are presently the owner's primary income source would become inoperable as a result of cancellation of all grazing privileges.

The overall effect would be the reduction of beef cattle production in San Diego County by 410 animal units out of a total of about 23,000 head. Replacement feed would cost $10 to $28 per AUM for private range or hay, respectively. Sufficient private rangeland is not available to fully replace the loss of public land forage. Total replacement value of this forage would be $50,000 to $138,000.

Of the four operators in the medium and large operator groups, only one would be noticeably affected by the loss of BLM forage supply. There could, however, be areas of private land which would be inaccessible due to closure on public lands. If so, the impact could be greater. The operator who would be noticeably impacted, obtains about 25% of his forage from the allotment on BLM. Loss of that allotment would reduce his herd by about 80 head. The ranch would continue to be operable as a family's primary income source.

Two of the small operators would be seriously affected by the loss of all BLM forage. The reduction in the operators income would probably be 10% to 15%. Though some other operators in the small operator group derive a higher percentage of their forage supply from BLM forage, they derive such a small part of their income from the livestock operation that the loss would be slight.

None of the three operators in the minor allotments group would be noticeably affected by a loss of BLM forage.

Grazing Alternative 2: Intensive Use

Water Resources

Livestock water consumption would decline initially from 0.5 acre feet annually to 0.3 acre feet (less than .01% of the perennial yield of 4,790 acre feet). By the year 2001, consumption would increase to 1.6 acre feet per year, which would be .03% of the perennial yield. This will result in an overall insignificant impact on total water quantity.

The reduction in livestock use, the proposed deferred rotation grazing systems, and the development of alternate water areas (which will eliminate concentration of livestock in riparian areas) will reduce stream bank erosion in riparian zones identified as being of critical management concern (Buck Canyon, Chariot Canyon, Pepperwood Canyon and Bow Willow Canyon). Stream bank vegetation will increase, which will reduce stream channel erosion, reducing soil sediment concentration when there is a channel flow. There will be no impact to riparian streams in the two new proposed allotments. In new allotment A, the Buck Canyon riparian area will be protected from grazing, and new allotment B has no identified perennial or intermittent streams.

Therefore, there will be no serious impact on water quality due to land treatments. The development of range improvements (i.e. springs, pipelines, troughs) will not impact water quality.

Soils

Under grazing alternative 2, two new additional allotments of 5,593 acres will be added. Development of proposed water troughs, springs and fences should reduce the congregation of cattle on small areas. Greater dispersement of cattle will reduce soil compaction around water facilities. Proper fencing will aid in keeping grazing in desired grazing areas. However, overgrazing and soil compaction will still occur around the fenced water structures. Where these structures are located on slopes of 30% and more, erodibility will fall into a severe class. Alternative 2 will improve vegetative cover from the present 48% to a projected 61% (see Table III-1).

Mechanical treatment will occur on 400 acres and prescribed burning is proposed on 13,096 acres in chaparral type vegetation to increase grazing potential. These types of treatments will increase soil erosion on a short term basis. This should last 2 to 3 years after which increased revegetation will reduce soil loss from treated areas to levels below the present level of erosion (see Table III-2 for erosional status).

Vegetation

Condition and Trend: Under grazing alternative 2 the overall trend will be upward for those areas with fair to good condition and good soil fertility. Impacts to vegetative condition will be a significant increase in good range condition from present levels for an overall change from 4% (2,820 acres) good range condition class to 19% (14,821 acres) in good range condition class (see Table III-3). No change in acreage in fair condition is anticipated. There will be a decrease of land in poor condition from 31% (25,131 acres) to 16% (12,808 acres).

Allotments primarily composed of desert plant communities (In-Ko-Pah, Vallecito, and Canebrake) will generally improve in condition. Seedling establishment will be enhanced, increasing the presence of desirable perennials, notably big galleta but also including desert needlegrass. The current upward trend in condition will be accelerated by the implementation of the proposed management systems. These will reduce stocking levels, and by eliminating over-grazing, seed production and food storage will improve. Deferred rotation will eliminate continuous spring grazing, which has hindered plant food storage. Continuation of grazing will provide for seed trampling, thereby enhancing reproduction.

The more Mediterranean allotments will also improve but for different reasons, since they are dominated by chaparral communities (primarily mixed and chamise). Increases in forage production will be due to prescribed burns of the chaparral and maintenance of the burned areas to eliminate chaparral encroachment. This will open up chaparral, allowing for the establishment of perennials, notably desert needlegrass but also including some mountain mahogany. This has occurred in the past. For example, in the mid-1940's, a fire in McCain Valley burned approximately 40,000 acres, resulting in a large increase in grasses in succeeding years until encroachment of chaparral species reestablished the pre-fire plant communities.

Forage Production and Grazing Management: As previously mentioned this increased production will result in two new allotments (see Map I-2) identified in Table III-3 as new allotments A and B. This results in a net increase of 11,273 acres suitable for grazing due principally to development of water and increased production. See Table III-3). Present vegetative production within these new allotments, 587 AUMs, will increase to 1,115 AUMs by 2001 due to land treatments and intensive management. Through land treatment and intensive management, under this alternative, present production of 3,788 AUMs would be increased to 7,317 AUMs by the year 2001. (See Table I-2 for future forage production by allotment).

Seasons of use under this alternative would have beneficial impacts in plant vigor and seedling establishment. For example one researcher found (Cable, Dwight, R. 1975) on a comparative range area that grazing from 11/1 to 2/28 would be less harmful than in the spring or summer, being less damaging to plant reserves. It was demonstrated that this period of use allows increased reproduction, seed trampling and vigor (Hormay, 1970). Grazing from 3/1 to 6/31 would subject key species (desert needlegrass, big galleta grass and mountain mahogany) to grazing during the critical growth period. Short term impacts would result in decreased plant vigor and decreased reproduction and seedling establishment (Hormay, 1970). These impacts can be compensated for by the recommended grazing systems since each pasture will be rested for 1 growing season following its grazing cycle. This will allow for plant vigor and seed production.

TABLE III-3

GRAZING ALTERNATIVE 2
PROJECTED RANGE CONDITION BY ALLOTMENT

ALLOTMENT	EXCELLENT	GOOD	FAIR	POOR	UNSUITABLE (STEEP ROCKLAND)	TOTAL
1) Tierra Blanca						
A) McCain Valley	0	3,625	3,090	1,383	2,030	10,128
B) Table Mountain	416	2,014	1,735	550	965	5,680
2) McCain Valley	0	360	0	0	0	360
3) San Felipe	0	123	1,470	0	223	1,816
4) Mt. Tule	0	3,183	627	600	300	4,710
5) In-Ko-Pah	0	3,196	3,793	1,851	7,443	16,283
6) Banner Queen	0	80	1,110	1,780	1,153	4,123
7) Canebrake	0	100	2,365	1,843	4,258	8,836
8) Vallecito	0	0	5,770	2,405	7,038	15,213
9) Oriflamme	400	240	40	1,360	4,873	6,913
10) Cigarette Hills	0	0	70	0	50	120
11) Julian	0	0	26	0	14	40
12) New Allotment B	0	0	951	1,036	950	2,937
13) New Allotment A	0	1,900	0	0	756	2,656
Projected-Total Acres	816	14,821	21,047	12,808	30,323	79,815
-Percent of Planning Unit	1%	19%	26%	16%	38%	100%
Present-Total Acres	0	2,820	21,010	25,131	30,323	79,815
-Percent of Planning Unit	0%	4%	26%	31%	38%	100%

Yearlong grazing is recommended for two allotments (Tierra Blanca and Oriflamme). Repeated grazing during spring and early summer (3/1-6/15) can have an adverse impact on plant growth, by lowering plant food reserves which will prevent leaf production necessary for photosynthesis. This will reduce seed production which would reduce reproduction of key grazing species (desert needlegrass, big galleta grass and mountain mahogany) and increase undesirable plants. However, on these two allotments the proposed grazing system is a 2 pasture deferred rotation (3/1-10/15) with 1 pasture for winter grazing (10/15-2/28). The 2 pasture deferred system alternates rest on the two pastures from 3/1-6/15. This provides for increased plant vigor and seed production. It also provides for grazing from 6/16-10/15 alternating every year between pasture. The year of summer rest provides for seed set. The year of summer grazing provides for seed trampling and seedling establishment. The winter grazing from 10/16-2/28 is less damaging to plant reserves which provides for plant vigor, seed trampling and reproduction.

Systems discussed so far are designed for perennial plant needs. Ephemeral production can be good in favorable years and additional use authorizations will be issued in years where there is favorable ephemeral production (200 lbs. dry forage/acres minimum). The production of ephemeral forage can vary greatly in any given year based on rainfall and temperature which are very unpredictable in the EIS area. Due to this it will not be possible to predict the extent of impact or allowance for use which can be licensed in any given year or years.

The most significant impacts will occur in riparian woodland habitats. Livestock will tend to congregate in these areas because of availability of water and lush vegetation. Four miles of riparian habitat (in Buck Canyon, Chariot Canyon, Pepperwood Canyon and Bow Willow Canyon) have been identified as currently having adverse impacts associated with livestock grazing. Only Buck Canyon, which falls within New Allotment A (see Map II-5) will be protected from livestock grazing under this alternative. The other areas will continue to have uncontrolled use which will increase stream bank erosion. The removal of stream bank vegetation will have an adverse impact on wildlife species that use these zones for feeding and nesting.

Range Developments and Facilities: The construction of 73 miles of fence will permanently remove 71 acres of vegetation. The development of 17 springs, 4.75 miles of pipeline, 19 water troughs, and 1 well will disturb an additional 18 acres of vegetation. The adverse effects of developing range improvements facilities would be that 91 acres will receive adverse impacts due to disturbance. However, due to the significant beneficial effects of water improvements, fencing, and improved distribution of livestock over the entire area overall beneficial impacts to the vegetation resources will offset any negative impacts resulting from vegetative disturbance or destruction because of new range improvements or facilities.

Prescribed burning on existing allotments will have a short term impact on 13,096 acres by removing vegetative cover and exposing the soil to erosion until cover is gradually established over a 2 to 3 year period after completion of the treatment. Long term impacts would be a change in species composition favoring perennial grass (needlegrass spp.) and shrubs (mountain mahogany) with increases in forage production and improvement in range condition. Approximately 2,836 AUMs could be provided from burning.

The plowing and seeding of 400 acres to wheatgrass species will increase ground cover and desirable forage production. There would be no adverse impact on vegetation since the area was cleared and seeded in 1969. Reseeding will improve ground cover, reduce soil loss (as discussed under the affected Environment-Chapter II) and increase forage production. Approximately 133 AUMs could be provided by the year 2001.

Threatened and Endangered Plant Species: Only two of the nine species of special management concern would not be impacted under alternative 2: Limnanthes gracilis var. parishii and Henchera brevistaminea. The reason they will not be impacted is that there will be no grazing in areas of their known locations.

If grazing alternative 2 were implemented, two new allotments (A & B) would be formed. Grazing and proposed land treatment for new allotment A would impact one species of special management concern (Lilium fairchildii). This species is rarely found and will most likely be State listed and possibly Federally listed. The palability of the species to cattle is unknown. No field inventories have been conducted in new allotment B. It is not certain if any species of special concern exist in the area.

The remaining six species (see Appendix B, Table A Sensitive Plants Species) although located within various allotments that will be grazed, are not considered especially palatable and would probably remain ungrazed, except for occasional sampling. Also, these plants are not considered extremely sensitive and most likely will not be State or Federally listed. Still, increased livestock densities through the implementation of AMPs could cause heavier utilization and loss of plants through trampling and proposed vegetative treatments such as burning. Although burning may eliminate individual plants, the available data does not indicate that any species will be eliminated from the study area.

Land treatments could encourage establishment of some sensitive plant species in some areas, and discourage establishment of some sensitive species. Effects of specific treatments on some of the sensitive plants are not known.

Range improvements other than vegetative treatment will have a less significant impact. They could cause the loss of individual plants but in very localized areas, not on the scale that could occur from land treatment of large parcels of land.

Land Use

Implementation of alternative 2 would have a short term adverse impact on eight allotments by reducing present livestock use from 4,710 AUMs to 1,992 AUMs (52% reduction). This will increase from 1,337 AUMs to 4,658 AUMs by the year 2001. However, four of these allotments would still have livestock use below 1978 levels. The reason is that existing allocations were made without the use of BLM suitability criteria (see Appendix A). When this criteria was applied during 1978 carrying capacity determinations, 38% of these allotments were classified unsuitable because of slope.

Implementation of alternative 2 would have positive impacts on livestock operator in the In-Ko-Pah, Mt. Tule, and Canebrake allotments. Present livestock use would increase from 755 AUMs to 1,979 AUMs initially. By the year 2001 these would increase to 4,462 AUMs.

Two new allotments are proposed under alternative 2. This would provide an additional 340 AUMs, with the development of water, by 1985. This could be allotted to present operators that will be reduced in livestock use. There would be an increase from present levels of 340 AUMs to 680 AUMs by the year 2001. Reductions in livestock use will be compensated by the issuance of ephemeral use authorizations. The levels of use will be dependent upon production studies described in the monitoring section of Chapter I.

Under alternative 2 all allotments would be stocked at full livestock carrying capacities. Initial stocking levels would be higher than under the proposed action, allowing less forage per grazing animal. During the first cycle of the proposed grazing systems, grazing in different areas at different times than at present would cause disorder and stress, reducing weight gains and decreasing the calf crop. After the first cycle, as the animals became adjusted to the systems, calf crops and weight gains would increase. In the long term, by the year 2001, increased in forage production would result in a continuing rise in weight gains, calf crops and weaning rates, although to a lesser degree than for the proposed action (economic impacts on operators are described under Socio-Economics).

The proposed land treatments to improve range forage condition will have an adverse impact on livestock operators. When burning conditions are favorable and funding become available it will be necessary for operators to reduce livestock use by levels commensurate with the area disturbed from land treatments. The time livestock levels will be able to return to pre-treatment levels will be based on the monitoring of reestablishment of ground cover.

Wildlife

Bighorn Sheep: Under grazing alternative 2 (Intensive Use), bighorn sheep would be reduced about 50% (50 animals) by the year 2001 and might eventually be eliminated. The main cause of this reduction would be the 93% increase in livestock use by 1985 in the In-Ko-Pah and Mt. Tule allotments and new allotment B. Bighorn sheep are extremely sensitive to competition from other ungulates. Wilson (1969 and pers. comm. 1980) has described and demonstrated the importance of space for bighorn. In Red Canyon of southeastern Utah, Wilson documented that no bighorn sheep use had occurred since the introduction of approximately 25 cattle in 1887. Within six months after cattle were removed from Red Canyon, bighorn sheep reoccupied their historic canyon habitat. Another study area had no livestock use and was considered as home range for a group of bighorn sheep. For a two week period, 30 cattle were introduced into the area. All bighorn sheep left the study area and did not return for eight months. The reaction of bighorn, as described by Wilson, to cattle occupying areas in or near bighorn habitat have also been documented by other investigators (Camel, pers. comm. 1980; Furlow, pers. comm. 1980).

This alternative would result in a 94% increase in forage by the year 2001 (Table I-2). However, very little of this increase would be available to bighorn because the vegetative treatments, which account for most of the increase, would be outside occuppied sheep habitat. Also, increased stocking rates would put additional competition for food and space on the already stressed sheep population. Although most of the cattle would be attracted to the forage produced by the vegetative treatments (above the bighorn habitat), some would find their way down to the sheep habitat and add to the current problem of sheep/livestock conflicts.

There would be an increase of feral cattle in Carrizo Gorge, the Grapevine Spring, and the Sombrero Peak areas due to the increase in stocking. Hicks (1978) and others have found cattle sign in many areas of steep slope believed to be inaccessible to livestock. Although the number of additional feral cattle attributable to this alternative would be small (probably less that 25), they could cause about 80% of the projected decline in the sheep population due to sheep intolerance of cattle presence in addition to the impacts on water and vegetation.

The possibility of successfully reintroducing bighorns into historic range in the Canebrake and Vallecito allotments as identified in the McCain Valley Wildlife Habitat Management Plan, would remain unknown. Decreases in livestock use in Vallecito allotment would be partially offset by increases in Canebrake.

The 39 miles of additional fencing within the three allotments where bighorn occur will probably result in about 0.25 bighorn mortalities per year. Although the fence will meet specifications to allow big game movement, those specifications have not been tested on bighorns under field conditions. (The estimate is based on the observation by BLM personnel of 0.5 sheep mortalities per year and the assumptions that about half the actual mortalities were observed; that mortalities would be 75% less likely per mile of the new fence, and that the new fence represents a 50% increase in fencing in sheep habitat.)

It is Bureau policy (BLM Manual 6840) to manage and/or conserve the crucial habitat of state-listed animals such as bighorn to minimize the need for listing in the future. Alternative two will not conform to this policy as competition with livestock within bighorn habitat and the present decline in bighorn numbers will continue.

Mule Deer: Mule deer populations will not change significantly as a result of this alternative. Prescribed burning and the proposed grazing treatments would increase forage production (Table I-2) and the new water developments would benefit deer, but the extent to which deer will occupy an area often depends upon how intensely the habitat is used by livestock (Skorlin et.al., 1968). Under this alternative improvements in the habitat would be accompanied by somewhat reduced livestock use. (Table I-2). In the study area approximately 12,572 acres (17% of total) is mixed chaparral habitat type. While these two habitat types represented the principal habitat, deer presently are found with the latter (chamise type), being the type requiring the most improvement to increase deer numbers. Under this alternative the chamise chaparral and mixed chaparral habitat are proposed for a total 13,096 acres of burning treatments. With these treatments (principally in the dense chamise and dense mixed chaparral shrub stands) significant improvement of forage production can be anticipated which will contribute to the overall improvement of this habitat for deer.

Allotments where deer habitat condition improve are San Ysidro, Tierra Blanca, Canebrake, In-Ko-Pah, and Banner Queen. In addition, improvement in forage condition is anticipated for Oriflamme which has a proposed reseeding of wheatgrass species (400 acres).

Other Wildlife: Small mammals and birds dependent on riparian habitat would probably be reduced in numbers to less than 10% of their potential due to increased cattle use of riparian and protection of only 1.5 miles of riparian area in Buck Canyon. However, the projected increases for range in fair to good over the 20 year period and other expected changes in condition classes (Table III-2) represent successional changes that would benefit some species such as quail, rabbits reptiles, etc., and potentially harm others. Because of the proposed increases in stocking rates, the impact on the study are as a whole would be positive for species which favor lower successional stages and negative for species which favor climax habitat stages.

Cultural Resources and Native American Values

Archaeological Resources

Archaeological resources are non-renewable, fragile resources. Due to their nature, virtually all impacts are negative to a degree. In general, the most beneficial impact is to stabilize the site and prevent further adverse impacts.

One of the major effects of livestock on cultural resources is trampling. This involves animals stepping on artifacts, perhaps breaking them, changing patterns and disrupting the vertical and horizontal placement of the artifacts. When considered together, these impacts can destroy not only individual artifacts but also the integrity of the site.

A study was conducted on an artificially created archaeological site to assess trampling impacts. The experiment conducted by Roney (1977) attempted to study trampling by creating a site within a corral and putting cattle in it. Although the study is not representative of all grazing situations, it did emperically demonstrate that major impacts could occur.

Another impact of grazing would be the chemical alteration of sites (or portions of) by animal waste Certain archaeological dating techniques involve the chemical testing of samples. If these samples are chemically altered, incorrect dating could result.

The deferred grazing systems proposed for the planning unit will not, by themselves, significantly affect archaeological resources. During a given grazing season, concentration of livestock on one pasture for three months will increase trampling-related impacts; however, the period of use would only be half as long.

Another primary impact to cultural resources is erosion. This can take the form of either wind or water and can damage or entirely destroy sites. Erosion is a natural force but is often affected by the acts of man. There are a number of man induced erosional factors that should be considered. Erosion will affect all sites, in one way or another, and to varying degrees.

Removal of vegetation (overgrazing, prescribed burning) will greatly increase erosion and can impact sites. Other actions such as redirecting water channels, ORV use, roads, and other alterations can affect erosion and impact sites. Sites can also benefit from erosion control in some cases.

Burning of certain areas can potentially destroy sites. This could happen if erosion is accelerated by loss of vegetative ground cover. Burning impacts would vary depending on site type and degree of heat. Lithic scatters and campsites would be especially affected by burning. Artifacts could be altered, broken and/or destroyed by heat. Ceramics could be altered in such a way as to preclude certain types of analysis (thermoluminescence). If significant quantities of stone and bone were burned prior to archaeological recovery, it could significantly alter intrepretation of the site. Obsidian (used for dating) could also be adversely affected.

Archaeological resources could be expected at or very near the majority of springs in the area. Actual construction at a spring could seriously impact surface and subsurface materials, especially if power equipment is used. Development of springs as permanent reliable water sources could result in congregation of livestock and consequently, severe trampling impacts. Fences, pipelines, and troughs could also impact sites.

Construction of fencelines could adversely affect any cultural resources which the fenceline crossed. The primary impacts would be to surface materials, but some subsurface disturbance could also occur. Since livestock tend to concentrate their traffic along fencelines, trampling impacts could be more severe.

The impacts of pipelines would be generally more severe than fencelines since more power equipment is used. One could expect that much more subsurface disturbance could result from pipelines than from fencelines since a continuous trench is dug. Water troughs along the pipeline could result in the congregation of livestock and greater trampling impacts.

Throughout the EIS area, the relatively high level of facility construction and treatment application would result in relatively greater impacts to cultural resources than for the other alternatives. The majority of the known and predicted sites including almost all of the campsites would be subject to varying degrees of trampling, which would increase by the year 2001 as grazing use increases. Those sites near water sources would be the most seriously impacted. Although the construction of additional water sources would initially disperse cattle use, use of water sources will rise as livestock numbers increase. Livestock would congregate near the water, heightening potential impacts. This could be especially critical in the Vallecito, Canebrake and Table Mountain allotments, which possess the most numerous archaeological resources. Similarly, more fencing is proposed for grazing alternative 2, so impacts from fence construction would be correspondingly higher than under the other alternatives.

In and around McCain Valley 8,317 acres of chaparral will be burned. Although the precise nature of the McCain Valley cultural resources is not known, it is believed to be rich, though not so rich as in the Canebrake allotment. There has been an active fire suppression program in this area, resulting in a dense chaparral cover in these portions of the In-Ko-Pah, Mt. Tule and Tierra Blanca allotments. Any fire, therefore, would be much more intense than under natural conditions, and the impacts on the cultural resource correspondingly higher than discussed. Burns in the chaparral would primarily effect relatively small sites, lithic scatters and isolates; few temporary camp remains are found in these areas.

Burning 950 acres in the Banner Queen allotment would also involve dense chaparral stands and intense fires. This allotment is not believed to be as rich in sites as the McCain Valley region.

Historical Resources: No significant impacts on historical resources are anticipated.

Native American Values: The proposed grazing systems were presented to tribal leaders and others from various Indian reservations in San Diego County. The proposals were explained and then the contacts were asked if there were any areas of Native American concerns that would be adversely affected in the planning area. No significant impacts on these areas from implementation of the proposed grazing systems were identified.

Recreation

Under grazing alternative 2 recreation access for hiking, sightseeing, etc., will be enhanced in areas adjacent to grazing allotments due to increased availability of roads leading to and within allotments where recreation activities occur.

Off-road vehicles are required to use only designated roads and ways on allotments which currently have public access. None of the range improvements will adversely impact these designated routes. Planned water developments described in alternative descriptions for range treatments will improve wildlife which will have an overall positive impact on hunting and nature photography activity described in grazing alternative 1. New and repaired water developments will provide an expanded distribution and lengthened availability period of water which will benefit game and non-game wildlife species. Each of these projects will have bird ramps and will be beneficial to upland game, small mammals, and deer.

Prescribed burns will increase the amount of forage available for both cattle and wildlife. Burning will provide a variety in habitat and increase the amount of edge available for upland game. The prescribed burns will have a beneficial impact by reducing the large accumulations of fuel, reducing the fire hazard and enhancing the personal safety of visitors. The Banner Queen allotment burns will require the closing of sections of the California Riding and Hiking Trail for safety reasons during the actual burn. This will have a short adverse impact on hiking and riding uses. Reduction of accumulated fuels will affect the computation of the fire danger rating. After burning, the amount of campfire closures will be reduced thereby extending the time that recreationists can use the grazed areas for recreational pursuits resulting in an overall positive impact.

The 400 acre mechanical treatment for disking and reseeding in the Oriflamme allotment will have positive impacts upon wildlife and will consequently benefit wildlife-oriented forms of recreation e.g., hunting, photography and sightseeing.

Visual Resources

Grazing alternative 2 would create moderate to strong vegetative form, line, color and textural changes in those locations where large scale land treatments are proposed. Most severe contrasts would occur in the Julian/Banner, Oriflamme and McCain Valley units since potential viewing locations look directly onto the proposed treatment areas. The San Felipe Hills unit would also exhibit similar impacts but to a lesser degree. In the case of McCain Valley and Julian/Banner, treatments would be carried out in geometric shapes which conform to grazing allotment boundaries rather than along natural contours. Both of these areas contain heavy stands of dark colored chaparral so that post-treatment conditions would show marked differences to adjacent non-treated areas. The San Felipe Hills, while also being burned to the allotment boundary, would not create intense contrasts because the unit's vegetation is more open and is a lighter color. Also, the most prominent viewing location is below rather than above. The existing land treatment area in the Oriflamme unit will continue to be a major scenic intrusion.

Socio-Economics

Grazing alternative 2 would create a new allotment but would initially reduce livestock forage allocations by 35%. Potential future livestock forage allocations by the year 2001 could increase by 49%. Neither the decrease nor increase would be noticeable in the community because the number of operators affected and the scale of the change is very small compared to a community of over 4,000 people or a county of 1.8 million people. The proposed changes in season of use would have little impact on the operators because the temperatures generally are too hot for livestock during the closed periods. Though the existing licenses show yearlong grazing, the allotments are not being grazed yearlong.

Operators in the large and medium group would have their AUM allocations reduced 29% initially. Increases in available AUMs by 2001, however, could provide a potential future increase of 61% over present levels. The initial changes to each of these four operators would range from a reduction of 65% to an increase of 127%. The operator receiving the 127% increase in AUMs would have a less than 10% total increase in income. The operator using the allotment allocated a 65% reduction would lose about 2% of his forage supply. The amount would be less in succeeding years as more AUMs would be allocated to livestock.

AUM allocations to small operators would be reduced by 43%. Potential future allocations could result in an allocation 4% below present levels. The initial changes in forage to these four operators would range from a 66% reduction to a 52% increase. The largest percent decrease could result in a 4% reduction in the operator's income.

The minor allotments would receive livestock AUM reductions of 51% initially. Long term allocations could increase up to 96%. None of the operators would be significantly affected by these changes.

The new allotment would start with 340 livestock AUMs and have a potential future allocation of 680 AUMs. These allotments would probably be licensed to present operators in the planning area.

Grazing Alternative 3: Proposed Action

Water Resources

Livestock water consumption would initially decline from 0.5 acre-feet annually to 0.3 acre-feet. By the year 2001, consumption would increase to somewhat less than the 1.6 acre feet of water identified in grazing alternative 2. This would be less than .03% of the perennial yield (4,790 acre feet). This is considered an insignificant impact. As described under grazing alternative 2 development of planned water sources will increase overall quality and quantity of water for wildlife and livestock purposes. Impacts on water quality will be as described for grazing alternative 2.

Soils

Under grazing alternative 3 ground cover will increase from the present 48% to a projected 65% (see Table III-1). With the increase of ground cover, soil erosion will reduce substantially. There will be a small amount of erosion around new water facilities and fences because of soil compaction. Overall, the reduction of livestock grazing in some areas and the deferred grazing systems will improve distribution and reduce soil compaction.

Prescribed burning and mechanical treatment will temporarily increase the erosion potential. By removing the canopy cover of shrubs which protect the soils, some short term erosion will occur. After approximately 2 to 3 years, a native grass cover will be established and will serve as a better soil erosion cover.

Treatments will have little or no short-term impacts on the Oriflamme allotment since the area is already denuded of 70% to 80% of vegetation. Soil erosion is 9 to 10 tons per acre in this area, well above the maximum allowable soil loss level of 3.45 tons per acre. Mechanical plowing and reseeding in this area will be beneficial in developing sufficient ground cover to reduce the erosion below the tolerable level.

Proper timing of the burning and mechanical plowing is important. These treatments would be performed after heavy rains have passed. Proper reseeding of introduced or native species of vegetation can be performed to control erosion and increase supplemental grazing.

Vegetation

Condition and Trend: The impact resulting from implementation under grazing alternative 3 would be a positive upward trend and an increase of ones in good and fair conditions for the reasons discussed for alternative 2. As shown on Table III-6, projected condition impacts for the 11 existing allotments and 1 proposed allotment would be a 1% increase in the excellent range condition class (816 acres), a 9% increase (9,905 acres) in the good range condition class, a 1% increase in the fair range condition class and a reduction of 8% (8,958 acres) in poor range condition class. For the EIS area, there will be an initial 41% reduction in current licensed use to 2,914 AUMs. By 1985 with the development of new water sources, livestock allocations will increase to 3,301 AUMs. Over the long term, initial reductions in use levels will be offset by the anticipated gains in available forage and subsequent authorized use levels and increased acreage suitable for grazing.

Forage Production and Grazing Management: With improved range conditions, proposed land treatment, and systematic grazing management, long term impacts to vegetation will be an increase in forage production associated with increased perennial grasses and desirable shrubs. An additional total forage capacity of 2,629 AUMs could be provided above existing levels shown in Table I-5. (3,588 AUMs to 6,217 AUMs).

The plowing and seeding (wheatgrass species) on 400 acres to have an overall beneficial impact due to increase in ground cover and desirable forage production. Reseeding of this old seeding area will improve ground cover once seedling establishment is successful and reduce soil loss (as discussed under the soils portion of this chapter) and, therefore, contribute to increase in forage production. Approximately 133 AUMs could be provided on these 400 acres by the year 2001.

TABLE III-6

GRAZING ALTERNATIVE 3
PROJECTED RANGE CONDITION BY ALLOTMENT

ALLOTMENT	EXCELLENT	GOOD	FAIR	POOR	UNSUITABLE (STEEP ROCKLAND)	TOTAL
1) Tierra Blanca						
A) McCain Valley	0	3,625	3,090	1,383	2,030	10,128
B) Table Mountain	416	2,014	1,735	550	965	5,680
2) McCain Valley	0	0	0	360	0	360
3) San Felipe	0	123	293	769	223	1,408
4) Mt. Tule	0	783	3,027	600	300	4,710
5) In-Ko-Pah		3,160	3,929	1,751	7,443	16,283
6) Banner Queen	0	80	1,110	1,780	1,153	4,123
7) Canebrake	0	100	2,365	1,843	4,528	8,836
8) Vallecito	0	0	2,494	5,681	7,038	15,213
9) Oriflamme	400	240	40	1,360	4,873	6,913
10) Cigarette Hills	0	0	0	70	50	120
11) Julian	0	0	0	26	14	40
12) New Allotment B	0	0	951	1,036	950	2,937
Projected-Total Acres	816	10,125	19,034	17,209	29,567	76,751
-Percent of Planning Unit	1%	13%	25%	22%	39%	100%
Present-Total Acres	0	2,820	18,074	26,167	29,567	76,751
-Percent of Planning Unit	0%	4%	24%	34%	39%	100%

This alternative would also reclassify areas from a potentially suitable class to a suitable class through the development of water. These areas include the Table Mountain portion of the Tierra Blanca allotment (4,715 suitable acres) and proposed allotment B (1,987 suitable acres). This would provide an additional 387 AUMs as shown in Table I-5. Through management this could be increased to 595 AUMs by the year 2001.

Under grazing alternative 3, present production, 3,588 AUMs, would be increased to 6,217 AUMs by the year 2001. (See Table I-5 for future forage production by allotment).

Deferred rotation grazing management proposed for this alternative requires periods of use (see Table I-5) and rest. However, these impacts would be the same for use periods as described under grazing alternative 2, since there is little difference in proposed periods of use between these alternatives. Overall impacts to vegetation can be described as beneficial due to tailored turn out and use periods on allotments to meet and improve key plant food reserves and seedling establishment. Grazing will be delayed on areas which are currently grazed too early to allow the plants' physiological requirements to be met. Allowance for these basic plant requirements coupled with adequate balance of utilization and proper distribution of livestock made possible by proposed range improvements will provide an overall long term beneficial impact on the area. Likewise, absence of grazing use in key areas within allotments will increase plant vigor, ground cover, and litter on areas where seedling establishment has begun.

The impacts to riparian zones will be as described in grazing alternative 2 except an additional 1.5 miles will be protected from grazing. The areas are 1 mile in Pepperwood Canyon and .5 mile in Bow Willow Canyon. This leaves 1 mile of riparian habitat in Chariot Canyon open to grazing. However, fencing and periodic rest in the spring (under the deferred rotation system) and piping of water away from streams, (if needed), will benefit riparian vegetation.

There are no perennial streams in the EIS area. The riparian zones mentioned within this section are intermittent (stream channels will have water flowing generally from winter to late spring, January to May, if rainfall is normal). This is the critical period for plant growth and wildlife needs. The needs of both should be met resulting in a beneficial impact due to the proposed deferred rotation grazing systems for allotments where important riparian zones have been identified.

Range Developments and Facilities: The construction of 67 miles of fence will remove 65 acres of vegetation from production since these disturbed areas would be continually traveled by livestock and wildlife ungulates as well as intermittent vehicular travel for maintenance purpose. The development of 19 springs, 3.25 miles of pipeline, 16 troughs, and two wells will impact 18 acres of vegetation. The total acreage lost to developing these range improvement facilities will be removal of 83 acres of vegetation and when compared to overall long term beneficial impacts, adverse impacts are insignificant.

Prescribed burning on existing allotments will have a short term impact on 6,861 acres by removing vegetative cover and exposing the soil to erosion until cover is established 2 to 3 years after completion of the land treatment. Long term impacts would be a change in species composition favoring perennial grasses (needlegrass spp.) and shrubs (mountain mahogany) resulting in improved range conditions.

Threatened and Endangered Plant Species: The impacts to threatened and endangered species through implementation of grazing alternative 3 would be the same as described in grazing alternative 2, except there would be less of an adverse impact. Three of the nine species of special management concern would not be impacted (Limnanthes graciles var parishii, Lilium fairchildii and Heuchera brevistaminea). Also, less land treatment will take place under grazing alternative 3.

Land Use

Implementation of grazing alternative 3 would have initial adverse impacts on seven allotments during the first five years by reducing present livestock use from 4,430 AUMs to 2,236 AUMs (overall 50% reduction). Impacts over the 20 year period will be positive due to a gradual increase from 2,236 AUMs to 4,868 AUMs. Only three allotments will show increases over present levels of grazing. The remaining four allotments, in 20 years, would still have livestock use below 1978 levels for reasons explained under alternative 2 impacts.

Livestock use on the In-Ko-Pah and Mt. Tule allotments would increase initially from 453 AUMs to 678 AUMs.

Two allotments will be terminated under alternative 3. This would be a loss of 26 AUMs.

One new allotment (allotment B) is proposed. This would provide an additional 140 AUMs by 1985 with the development of water sources. This could be allocated to present operators that will be reduced initially elsewhere.

Livestock performance (reproduction capability) would improve on six allotments as described in grazing alternative 2. Performance, however, would improve at a faster rate in the Canebrake and In-Ko-Pah allotments because of lower initial stocking rates. Livestock performance will decline on the Mt. Tule, Julian and San Felipe allotments. Adverse impacts on reproduction of livestock will occur because no land treatments are proposed to reduce declining vegetation production due to chaparral encroachment. Due to this decline in forage production over the 20 year period a more severe adverse impact on livestock performance will occur unless some measure of vegetative enhancement is taken.

Allotments that are proposed for land treatments will have adverse impacts on livestock operators as described for grazing alternative 2. Economic impacts on operators would be as described under Socio-Economics.

Wildlife

Bighorn Sheep: The bighorn sheep population in the In-Ko-Pah and Mt. Tule allotments will stabilize at its present level of about 100 animals under grazing alternative 3. Although there is historical evidence that bighorn do not do well and often do not survive in areas that are grazed, six factors will interact to maintain the herd at this level:

(a) This sheep population is endemic, not introduced. It formerly occupied a much larger area; its current range within the In-Ko-Pah and Mt. Tule allotments being a remnant that has survived due to the availability of water and escape cover. Historic livestock use of this area was much greater than at present (J.L. McCain, personal comm. 1976). Yet the sheep were able to survive here while they died out elsewhere.

(b) Although this bighorn population is not legally hunted, it does receive harrassment from ORV and other visitors to the area. The continued closure of all roads within the 8,000 acre area for bighorns and increased law enforcement will reduce harrassment.

(c) The proposed change in season of use will reduce the opportunity for bighorn/livestock contact. Although a minority of the sheep (mostly rams) use parts of the area west of Carrizo Gorge the year round, most ewes and lambs are on the east side of Carrizo Gorge during the winter (Cunningham 1980).

(d) The range treatments (burning, etc.) in McCain Valley would help to attract livestock away from the bighorn habitat.

(e) Anticipated improvements in range condition could benefit bighorns. However, URA Step 3 indicates that bighorn habitats in this area generally are "pristine." Cunningham (1980) and Hicks (1978) cite the need for studies of the condition of the vegetation for bighorns, but it appears that the vegetation is excellent for bighorn forage and cover.

(f) Feral cattle numbers will not increase. Fencing the grazed portion of the allotment off from bighorn habitat will eliminate most livestock use of the proposed 8,000 acre bighorn range; only yearlings who can make their way through the fence will enter the bighorn area. Although they are extremely wary, attempts to remove feral cattle will prevent their increase.

Assuming the bighorn enhancing measures set forth in MFP Step 2 are vigorously applied (removal of feral cattle, fencing and livestock herd control measures), these six factors will together result in a stabilized population. Grazing alternative 3 will not, however, provide additional habitat for the sheep, so an extension of bighorn range is not anticipated.

Water sources, adequate today, will be enhanced by restrictions on cattle and ORV access, and two new springs will be developed in the bighorn range.

The proposed reintroduction of bighorn sheep in the Canebrake allotment will not be significantly affected by livestock grazing. By 2001, there will be a reestablished bighorn herd occupying this portion of their historic range. The core of the reintroduction zone, 4,000 acres, will be withdrawn from the allotment and is, in any case, composed mainly of steep slopes unsuitable for livestock grazing. This same zone is enriched desert scrub habitat, excellent for bighorn sheep. It is presently in stable condition, and will improve slightly by the year 2001. Additionally, a water source will be developed for bighorn use in Inner Pasture. Bighorn will be able to migrate into the ungrazed portions of the Vallecito allotment, presently upland enriched desert scrub habitat in pristine condition. Cattle use will probably be confined to the Potrero and Vallecito valleys, while sheep will graze primarily on steep, rocky slopes.

It is Bureau policy (BLM Manual 6840) to manage and/or conserve the crucial habitat of state-listed animals such as bighorn to minimize the need for listing in the future. Alternative three will conform to this policy by protecting over 8000 acres of crucial bighorn habitat, thereby halting the current decline in population, and by providing for reintroduction into the Canebrake allotment.

Mule Deer: Mule deer populations in the study area will increase slightly as a result of increased forage production and reduced livestock numbers under this alternative. Most of this increase will occur in the Tierra Blanca and In-Ko-Pah allotment, due to the burning of 5,521 acres of the dense chaparral stands in this area and the restriction of ORV access. This will stimulate new growth and increased forage. Competition with livestock for this forage may limit growth, but an improvement in chaparral condition to good in burned areas will result in deer densities of 3 to 5 per square mile throughout the allotment.

Within the Vallecito allotment, deer densities would not significantly increase. This will be due to a continuing deterioration in the condition of chaparral, none of which will be burned.

Deer populations also will not change significantly elsewhere in the planning unit. Burns on 950 acres of Banner Queen allotment, while improving habitat at that site, will be counterbalanced by the declining condition of chaparral habitat in the allotment. Similarly, deer densities will also remain stable in the Canebrake allotment, despite 390 acres of burning, since chaparral will decline on the remaining 2,000 acres of potential habitat. No improvement in either deer habitat or deer density will occur in any of the remaining allotments.

Other Wildlife: The populations of riparian wildlife species would be brought up to about 40% of potential. A total of 3 miles of riparian habitat would be protected from grazing (Buck Canyon, 1.5 miles; Pepperwood Canyon, 1 mile; and Bow Willow, .5 miles). Riparian vegetation would be improved in those areas and would benefit quail, non-game birds, raptors and other mammals. Some riparian areas in these locations along with small habitats in the area below Lost Valley Reservoir and the Rattlesnake Spring drainage would continue to deteriorate. In these locations deterioration of habitat of Cooper's Hawk, large blotched salamander and other species would continue.

Many species would be expected to respond with increased numbers as a result of vegetation manipulation (burning) of 6,681 acres in four allotments and as a result of 19 spring developments in six allotments.

Cultural Resources and Native American Values

Impacts to cultural resources and Native American Values would be similar to those described for grazing alternative 2 with the following exceptions. Fewer miles of fences and water pipelines would be constructed, and a less intensive program of water development would be implemented. Impacts from construction and concentrated trampling by livestock would be correspondingly lighter. Lower stocking rates and burning only 6,861 acres would similarly affect the intensity of impact. Further, the designation of 8,380 acres of the In-Ko-Pah allotment as bighorn habitat would moderately reduce impacts from trampling, development and access in that area, although present livestock use is light.

Recreation

Under grazing alternative 3 the McCain Valley and Cigarette Hills allotments will be eliminated and the impacts in these areas will be the same as those described in grazing alternative 1.

Impacts on the remaining allotments will be the same as those described for grazing alternative 2, with the following exceptions. Off-road vehicle use is and will be restricted in In-Ko-Pah allotment by excluding ORV access into Sombrero Peak, Bow-Willow, and Rock House Canyons. On the five allotments, discussed under grazing alternative 1 in this section, efforts will be made to open access to the public for recreational purposes. The overall impacts regarding access will be positive.

No prescribed burns are planned for the Canebrake and San Felipe allotments. They are part of the 34.6% (3,635 acres) reduction in prescribed burns from grazing alternative 2. The magnitude of the positive impacts from burning will be reduced accordingly.

Visual Resources

Impacts occurring from the implementation of land treatments as prescribed under grazing alternative 3 will be similar in intensity to those anticipated for grazing alternative 2; i.e., moderate to strong vegetative form, line, color, and textural contrasts. In terms of impacts created by grazing developments and structures, contrasts will be weak to negligible with vegetative line associated with fence construction being most common. As with grazing alternative 2, the Julian/Banner, Oriflamme and McCain Valley units will receive the bulk of the anticipated impacts. See Appendix F for a summary of anticipated contrasts resulting from the Proposed Action. VRM Land Class requirements will not be met for the Julian/Banner, Oriflamme and McCain Valley units by this alternative.

Socio-Economics

Grazing alternative 3 would create one new allotment and make an overall reduction in livestock forage allocations of 41%, initially. Future forage allocations could be up to 22% above present levels by the year 2001. Neither the decrease nor the increase would be noticeable to the local communities because the number of operators affected and the scale of the change is very small compared to a community of over 4,000 people or a county of 1.8 million people. The changes in season of use would have little economic impact.

Large and medium operators would have the same impacts as under grazing alternative 2, except there would be less increase in AUMs. Initially, livestock forage would be reduced by 36% to these operators, with a potential future increase of 52%. One operator would sustain an income reduction of about 10% the first year. Other large and medium operators would be less affected.

The small operators would have the same impacts as grazing alternative 2 except the one receiving an increase would get a smaller increase.

The minor allotments, would be almost entirely eliminated by a 96% reduction in livestock forage. However, none of the operators will be noticeably affected by a loss of BLM forage.

The new allotment would start with 140 AUMs and have a future potential of 160 AUMs. The operator would probably be one of the operators now in the planning area.

Grazing Alternative 4: Limited Use

Water Resources

Impacts on water use will be as described for grazing alternative 3.

Impacts on water quality from stream bank erosion along four miles of riparian habitat identified to be of critical management concern will be reduced by increased vegetative cover expected from the elimination of grazing in these areas. Stream bank vegetation along remaining areas of riparian habitat, not identified as being of critical concern, will be maintained or improved through the implementation of grazing systems and new water developments. This will assure good quality stream flow.

Impacts to water quality, through increased sediment yields, from land treatments and range improvements will be as described in grazing alternative 2 but to a lesser extent since the levels of land treatment and range developments proposed under the alternative, are less than those proposed under grazing alternative 2.

Soils

Grazing alternative 4 will limit the amount of livestock grazing pressure on the vegetation. By reducing grazing in the EIS study area, ground cover will increase, thereby reducing soil erosion. The surface ground cover in the EIS study area is 48%. Under the limited use alternative, cover will increase to 55% (Table III-1). Livestock grazing will increase in key grazing sites. These sites are in areas where cattle will congregate because of available water, salt, food, and vegetation. Erosion in these key-grazing sites will increase because of water flow patterns and concentrated animal use. Only a 10% increase in total ground cover will occur in these sites due to the increase in erosion.

Vegetation

Condition and Trend: The impacts to vegetation condition and trend under grazing alternative 4 will be a gradual and slight movement toward improved condition by predominant reduction of existing poor condition rangeland with significant gains in good condition and gradual upward trend for the reasons discussed for alternative 2. The most significant gains are 13% increase (9,409 acres) in good condition and 12% reduction (8,958 acres) in poor condition range (see Table III-9). An additional 816 acres would move into the excellent condition class as a result of this alternative. Of this excellent class acreage, 416 acres would become suitable through the development of water. Another 400 acres will be moved from good class to excellent in the Oriflamme allotment.

TABLE III-9
GRAZING ALTERNATIVE 4
PROJECTED RANGE CONDITION BY ALLOTMENT

ALLOTMENT	EXCELLENT	GOOD	FAIR	POOR	UNSUITABLE (STEEP ROCKLAND)	TOTAL
1) Tierra Blanca						
A) McCain Valley	0	3,625	3,090	1,383	2,030	10,128
B) Table Mountain	416	2,014	1,735	550	965	5,680
2) McCain Valley	0	0	0	360	0	360
3) San Felipe	0	0	293	769	223	1,285
4) Mt. Tule	0	3,810	0	600	300	4,710
5) In-Ko-Pah	0	2,360	4,729	1,751	7,443	16,283
6) Banner Queen	0	80	1,110	1,780	1,153	4,123
7) Canebrake	0	100	2,365	1,843	4,528	8,836
8) Vallecito	0	0	2,494	5,681	7,038	15,213
9) Oriflamme	400	240	40	1,360	4,873	6,913
10) Cigarette Hils	0	0	0	70	50	120
11) Julian	0	0	0	26	14	40
Projected-Total Acres	816	12,229	15,856	16,173	28,617	73,691
-Percent of Planning Unit	1%	17%	22%	22%	38%	100%
Present-Total Acres	0	2,820	17,123	25,131	28,617	73,691
-Percent of Planning Unit	0%	4%	24%	34%	38%	100%

Forage Production and Grazing Systems: With improved range conditions from prescribed burning and grazing management, long term impacts to vegetation in 20 years will be an increase in forage production associated with increases in perennial grasses and shrubs. An additional 2,756 AUMs could be provided over and above present levels 3,393 AUMs (Table I-8).

The plowing and seeding of 400 acres to wheatgrass would be eliminated under this alternative. This would allow for the movement of chaparral species to climax. Present forage production of 37 AUMs would drop to 30 AUMs in 20 years for a negative impact on vegetative production.

This alternative would reclassify one area (Table Mountain of the Tierra Blanca allotment) classed as potentially suitable to a suitable class, through the development of water. This would provide an additional 287 AUMs (shown in Table I-8). Through management this would be increased to 435 AUMs by the year 2001. While this provides a beneficial impact it does not compare with the larger extent of beneficial impacts attributed to production increases under grazing alternative 2 or 3.

Through land treatment and intensive management, under grazing alternative 4, present production (3,398 AUMs) would be increased to 6,149 AUMs by the year 2001 (see Table I-8 for future forage production by allotment).

The impacts to vegetation by grazing during different periods-of-use under grazing alternative 4 are the same as described in grazing alternative 2 since there is no change in proposed periods-of-use between the two alternatives.

The impacts to 4 miles of riparian habitat identified as being adversely impacted under proposed action will be eliminated. These areas are: Buck Canyon (1.5 mile), Chariot Canyon (1 mile), Pepperwood Canyon (1 mile), and Bow Willow Canyon (.5 mile). The diversion of water away from the stream channel and fencing of initial areas will allow for increased vigor and the reproduction of vegetative cover along the stream banks subsequently reducing soil sediment yields and improving feeding and nesting habitat for bird and raptor species which inhabit these areas. The impacts to riparian habitat which are not eliminated and still occur under this alternative will be as described in grazing alternative 3, proposed action.

Range Developments and Facilities: The construction of 65 miles of fence will remove 63 acres of vegetation, since the disturbed areas would be continually traveled by livestock and wildlife ungulates, as well as by vehicles needed to maintain the fence lines. The development of 17 springs, 2.25 miles of pipeline, 21 troughs and two wells will adversely impact 17 acres of natural vegetation. The total loss of natural vegetation due to development of range improvement facilities will be 80 acres of vegetation.

Threatened and Endangered Plant Species: Impacts would be similar to those described in grazing alternative 2 but with somewhat lesser degree of adversity. Three allotments will have grazing allotments terminated and one allotment (In-Ko-Pah) will be reduced in acres by over 6%.

Land Use

Implementation of grazing alternative 4 would have a short term adverse impact on six allotments by initially reducing present use from 4,425 AUMs to 2,194. However, use would increase to 4,797 AUMs by the year 2001. Three of these allotments (Banner Queen, Canebrake and Tierra Blanca) will show increases over present levels of grazing. The remaining three (San Felipe, Oriflamme and Vallecito), will still have livestock use below 1978 levels. The reasons for this are described in grazing alternative 2.

Present levels of use in the In-Ko-Pah and Mt. Tule allotments would initially increase from 453 AUMs to 551 AUMs. By the year 2001, livestock use would increase from 551 AUMs to 1,330 AUMs.

Livestock performance and production would be affected on seven allotments (see Table I-8) much as it would be under grazing alternative 2. The grazing systems, periods-of-use and land treatments, except for Oriflamme, will be the same. See grazing alternative 2 for impacts of grazing systems and treatments; however, the levels of use in 20 years would be lower due to the change in allotment boundaries (allotment size in some allotments under grazing alternative 4 are reduced). Livestock performance and production will decline on the San Felipe allotment because no land treatments are proposed to reduce declining vegetative production due to chaparral encroachment. Economic impacts on operators are described under Socio-Economics.

The impact of terminating three allotments would be as described in grazing alternative 1.

Wildlife

Bighorn Sheep: Under grazing alternative 4, Limited Use, the bighorn sheep population in the In-Ko-Pah and Mt. Tule allotments will increase slightly to 110 animals by the year 2001. The factors influencing this change are the same as those discussed under grazing alternative 3. The exclusion of livestock from an additional 4,000 acres of bighorn habitat (for a total exclusion area of 12,140 acres) will place all bighorn habitat outside grazed areas. Of particular significance would be the increased protection of all bighorn water sources. This will allow an expansion of bighorn distribution and population. Livestock, particularly yearlings, may occasionally enter bighorn habitat and adversely affect the population; however, the degree of impact will probably be minor. Opportunities for reintroducing bighorns in the Canebrake and Vallecito allotments would be the same as under grazing alternative 3 since livestock use of those areas would remain the same (Table I-5 and Table I-8).

It is Bureau policy (BLM Manual 6840) to manage and/or conserve the crucial habitat of state-listed animals such as bighorn to minimize the need for listing in the future. Alternative four will conform to this policy by protecting over 12,000 acres of crucial bighorn habitat, thereby halting the present decline in population, and by providing for reintroduction into the Canebrake allotment.

Mule Deer: Mule deer will increase slightly in response to increased forage production and reduced livestock numbers under this alternative. Except for two allotments, increases will occur in the same manner and locations as under alternative 3, although to a slightly greater degree due to the decrease in livestock stocking rate, within the Mt. Tule and In-Ko-Pah allotments, greater increases are possible. Burning 2,436 acres of chaparral in Mt. Tule allotment will greatly enhance deer habitat. Although deer are not common at present, the elimination of dense brush stands will allow expansion of their range into this area. A high density is not anticipated, however, due to ORV intrusions. Similarly, inclusion of part of the In-Ko-Pah allotment into the bighorn protective area will provide 4,000 more acres than under grazing alternative 3 that are nearly free of competition with livestock.

Other Wildlife: The populations of riparian species of wildlife in the study area would increase to about 50% of their potential by the year 2001. Riparian zones excluded from the effects of livestock grazing would include those discussed in grazing alternative 3 plus an additional 1 mile of riparian habitat in the Chariot Canyon area. Approximately 8 miles (65%) of riparian areas would remain unprotected from the effects of livestock grazing.

Quail, non-game birds, and other species are expected to benefit from vegetative manipulation of 9,279 acres, which will increase ecotone (transition) areas, and from the development of 17 springs.

Cultural Resources and Native American Values

Impacts on cultural resources and Native American values under grazing alternative 4 would be similar to those described for grazing alternative 2 with the following exceptions. Construction of fences and water pipelines would be reduced, with correspondingly fewer impacts. Two additional water troughs will be built. Burning will not occur in the San Felipe, Julian, McCain Valley and Cigarette Hills allotments. These allotments are not known to have the wealth of sites that have been located in the allotments to be burned.

Recreation

Under grazing alternative 4 the Julian, McCain Valley and Cigarette Hills allotments will be eliminated and the impacts in these areas will be the same as in alternative 1. In the remaining allotments the impacts will be the same as those described in grazing alternative 2 except that no prescribed burning will occur in the San Felipe allotment. This results in a 11.4% (1,199 acre) reduction in prescribed burns and associated impacts.

Visual Resources

Impacts resulting from implementation of grazing alternative 4 are identical to those of grazing alternative 3. See Appendix F for a summary of anticipated contrasts created by the limited use alternative. VRM Land Class requirements for the Julian/Banner, Oriflamme, and McCain Valley will not be met by this alternative.

Socio-Economics

No new allotment would be created under grazing alternative 4 and livestock AUMs would be reduced by 44% initially. Potential future allocations could increase by 19%. Neither the decrease nor increase would be noticeable in the local communities. The changes in season of use would be the same as grazing alternative 2 and, likewise, would have little economic impact.

Large and medium operators would have their total allocation reduced by 41%. Their allocation could be increased in the future up to 41% above the present level. The allocations would be the same as grazing alternative 2 except that the allotment receiving the largest initial increase would receive a much smaller increase (+18% rather than +90%).

The impacts to the small operators would be the same as under grazing alternative 3 except that the allocation for the San Felipe allotment would be substantially lower, sustaining a 69% decrease rather than a 52% decrease.

Grazing Alternative 5: No Action

Water Resources

Water consumption by livestock will continue at 0.5 acre feet per year.

The impacts to water quality from livestock fecal contamination would be as described in grazing alternative 2.

Vegetative cover along the 4 miles of riparian habitat identified as being of critical management concern would continue to decrease as grazing would continue in these areas. This would result in increases in stream bank erosion. The quality of the water in these intermittent streams would decline, although the precise degree is uncertain. The downward trend is not expected to be reversed by the projected decline in grazing use by the year 2001 due to the overall decline in range quality projected for the same period.

Soils

Grazing alternative 5 will permit a continuation of the present level of land use. Soils in the EIS area are in a moderate erosion state at this time. Continued use of present grazing management will reduce plant cover and soil protection. In heavy use areas, degradation of the soil surface will continue over a period of 2 to 3 years. Total ground cover will decline (see Table III-1) from the present 48% cover to a projected 30% cover (BLM, 1974).

Areas that have slopes greater than 30% fall into a severe erodibility class. If vegetation is removed, the present erosion will increase over the maximum allowable soil loss of 3.45 tons per acre.

Vegetation

Condition and Trend: Continuation of present management will perpetuate downward trends and increase overall poor range condition. Seven allotments will be grazed over the carrying capacity, thus over-utilization would occur causing a decrease of desirable habitat types with perennial grasses (i.e., needlegrass and big galleta grass) and an increase in invader species (snakeweed, rabbitbush etc.).

Continued spring use on desirable species will deteriorate plant vigor which will reduce seed production, thus reducing seedling establishment. As a result of this, undesirable invaders will establish, aiding in a downward trend in range condition. Overall range condition will deteriorate resulting in an increase in poor condition range by 6% (4,280 acres) above present levels. There would be a decrease of 9% in fair condition (6,340 acres). See Table III-10.

Four allotments would continue grazing at levels under the present forage capacity for these allotments (In-Ko-Pah, Canebrake, Tierra Blanca, Mt. Tule). This would maintain plant vigor and seed production (needlegrass and big galleta grass) in the semi-desert-chaparral and enriched desert shrub communities. Some areas on these allotments, presently in fair range condition, would improve a condition class. The end result in the year 2001 will be present good condition range increasing by 1,260 acres. A combination of some fair condition range dropping a condition class and some moving up a condition class, by the year 2001 present levels of fair condition range will decrease by 6,340 acres. Excellent range condition would increase by 800 acres on the Oriflamme allotment with land treatment.

TABLE III-10

GRAZING ALTERNATIVE 5
PROJECTED RANGE CONDITION BY ALLOTMENT

ALLOTMENT	EXCELLENT	GOOD	FAIR	POOR	UNSUITABLE (STEEP ROCKLAND)	TOTAL
1) Tierra Blanca						
A) McCain Valley	0	0	2,658	5,440	2,030	10,128
B) Table Mountain	0	2,080	1,745	890	965	5,680
2) McCain Valley	0	0	0	360	0	360
3) San Felipe	0	0	0	1,062	223	1,285
4) Mt. Tule	0	0	2,610	1,800	300	4,710
5) In-Ko-Pah	0	1,660	3,530	3,650	7,443	16,283
6) Banner Queen	0	240	0	2,730	1,153	4,123
7) Canebrake	0	100	0	4,208	4,528	8,836
8) Vallecito	0	0	0	8,175	7,038	15,213
9) Oriflamme	800	0	240	1,000	4,873	6,913
10) Cigarette Hills	0	0	0	70	50	120
11) Julian	0	0	0	26	14	40
Projected-Total Acres	800	4,080	10,783	29,411	28,617	73,691
-Percent of Planning Unit	1%	6%	15%	40%	38%	100%
Present-Total Acres	0	2,820	17,123	25,131	28,617	73,691
-Percent of Planning Unit	0%	4%	24%	34%	38%	100%

Forage Production and Grazing Management: One allotment would continue under an existing AMP with continued maintenance of an 800 acre wheatgrass seeding (this includes the plowing and reseeding of 400 acres of this seeding). This will increase present production (270 AUMs) to 800 AUMs by the year 2001. No other allotments will receive land treatment under grazing alternative 5. As a result, production will decrease as chaparral and shrub species approach ecological climax. Production will also be decreased in many allotments because they will be grazed in excess of their carrying capacities. This will occur for the same reasons discussed under condition and trend. Four allotments were identified as being grazed under present forage production levels. Only one of these allotments (In-Ko-Pah) would increase under grazing alternative 5 for reasons discussed under condition and trend and because the acres of brushland are not extensive (less than 18% of the allotment). Production would increase by 113 AUMs from 568 AUMs to 681 AUMs. The three allotments that would be grazed under present forage capacity (Tierra Blanca, Canebrake, Mt. Tule) will still decrease in forage production by the year 2001.

Four miles of riparian habitat, identified as being adversely impacted by livestock grazing, would continue to be grazed. Grazing in these areas would be expanded to other areas along the riparian streams because of the lack of vegetation in the already impacted areas, eventually resulting in trampling of stream banks and removal of vegetation with a resulting increase in stream bank erosion and the loss of more wildlife habitat for feeding and nesting.

In summary, with no land treatment (except for 800 acres in Oriflamme), yearlong grazing in excess of present carrying capacity, by 2001 the present forage capacity of 3,393 AUMs will increase only slightly to 3,767 AUMs (See Table I-11 for future forage production by allotment in the year 2001).

Range Development and Facilities: Under grazing alternative 5, grazing will be retained at the level of 1978 permitted use. There would be no new range improvements constructed. Limited maintenance on 26 miles of existing fence will continue to impact 25 acres of vegetation. The continued existence and use of 46 spring developments, 25 miles of pipeline, 46 troughs, 1 well and 3 reservoirs will continue to impact 60 acres of vegetation. The total effects of maintaining range improvements would be that 85 acres of vegetation would remain disturbed. It should be noted that many of these existing facilities are in extremely poor condition and in many cases in need of replacement. Without intensive management, use, and new development, which would occur under other alternatives, the overall range condition and management will continue to have adverse impacts on the vegetation resource as a whole. In addition, no treatment of dense chaparral communities would be anticipated and this would result in severe impact on the vegetation resources due to continued depletion of perennial species, related vigor and litter, and soil fertility.

Threatened and Endangered Plant Species: None of the nine species of critical management concern will be significantly impacted.

Land Use

Livestock performance and production under grazing alternative 5 would decline on nine allotments for two reasons. First, present range forage conditions would be expected to decline since no land treatment would occur; therefore, the chaparral areas would move towards ecological climax with a subsequent decrease in forage production. Second, grazing would be yearlong at levels in excess of present forage capacities. The rate at which production and performance decline would be directly proportional to levels of use. If continued maximization of allocations occurred, then the rate of deterioration would be correspondingly higher.

Two allotments (Oriflamme and In-Ko-Pah) would increase in livestock performance and production. The No Action alternative on the Oriflamme allotment will allow for maintenance of an existing seeding. Production will increase from the present 170 AUMs to a projected 533 AUMs on these 800 acres by the year 2001. Impacts will be as described in grazing alternative 2, although increases in the In-Ko-Pah allotment will be at a slower rate due to the lack of land treatments.

Wildlife

Bighorn Sheep: Under grazing alternative 5, the sheep population will decline to about 75 animals in the In-Ko-Pah and Mt. Tule allotments. A decline in the condition of the chaparral in the southwestern portion of the allotment will force cattle to use those parts of the allotment near the bighorn range more frequently. Additionally, the continuation of yearlong grazing permits will allow livestock use at the same time that bighorn are present. No protection will be afforded critical yearlong ram habitat in the allotment, especially around Sombrero Peak and Upper Bow Willow Springs. Livestock encroachments on bighorn habitat will consequently increase, causing abandonment of range and loss of the use of springs.

The potential for bighorn reintroductions in the Canebrake allotment will not be enhanced. The Inner Pasture water source will not be developed, and the 4,000 acres of the allotment to be designated a reintroduction zone in grazing alternatives 2, 3, and 4 will remain within the allotment.

It is Bureau policy (BLM Manual 6840) to manage and/or conserve the crucial habitat of state-listed animals such as bighorn to minimize the need for listing in the future. Alternative five will not conform to this policy as competition with livestock within bighorn habitat and the present decline in numbers will continue.

Mule Deer: Under the No Action alternative, deer populations for the study area as a whole would not be expected to change noticeably. There would be a decline in overall range condition. This would be particularly acute on chamise habitats described for those allotments covered in previous discussions for grazing alternatives 1 and 2. Presently there are no land treatments, such as prescribed burning, proposed for allotments under present management. However, one allotment (Oriflamme), would continue implementation of an existing AMP which will serve to improve overall habitat condition for deer in this allotment. In addition this allotment will have a seeding treatment for 800 acres under this alternative which would be beneficial to deer because it will provide a significant increase in forage availability.

Other Wildlife: Small game species such as quail, doves, and rabbits are expected to be affected adversely due to over-grazing on the majority of habitat types which small game species depend upon. This adverse impact will be accentuated in dry years. However, in wet years such as the last three, population increases will occur.

The 12 miles of riparian habitat discussed under grazing alternative 1 would continue to decline in potential for wildlife. Coopers' Hawks in Buck Canyon would very likely be reduced. Other riparian species such as the large-blotched salamander or the Yellow Warbler will continue to decline.

Cultural Resources and Native American Values

The continuation of present management under grazing alternative 5 would probably not impact any more cultural resources and Native American Values than are currently being impacted. However, these resources would continue to suffer from those currently ongoing impacts described under grazing alternative 2.

Recreation

Generally, anticipated impacts to recreation under grazing alternative 5 will revolve around health, sanitation and safety hazards created where livestock and people occupy the same site or area. Locations where these impacts appear to be most severe are in the three developed campgrounds and in the Lark Canyon ORV Use area in McCain Valley. Currently, cattle are free to roam throughout the campgrounds because exclosure fences are down. Similarly, while no vehicle/livestock accidents have been reported in the Lark Canyon area, the potential for accidents will be increased as ORV use is concentrated by the implementation of the McCain Valley Recreation Activity Management Plan.

Other vehicular-oriented or vehicular supported recreational uses (hunting, rock collecting, camping) will be impaired since no new access points will be provided by this alternative. Consumptive and non-consumptive wildlife opportunities will continue to be marginal in most areas since no new additional water and forage improvement projects are proposed.

Visual Resources

Implementation of grazing alternative 5 will have no additional discernable impact on the area's visual resources.

Socio-Economics

Continuing present management under grazing alternative 5 would maintain the present livestock use but would result in future declines of 28%. The initial socio-economic impacts of this alternative would be the same as described for grazing alternative 2. By the year 2001, large and medium operators would have an overall 11% reduction in livestock forage from their allotments. The range of changes for these operators would be from 25% to +89%. None would be significantly affected.

The small operators would have a future overall 51% reduction in forage from their BLM allotments. These changes would range from -74% to +14%. However, these changes would not have significant effects on incomes.

Livestock forage allocations to operators on the minor allotments would, in the future, be reduced by 57%. By operator, the reductions would range from 10% to 57%. None would be significantly affected in terms of income.

MITIGATION

Mitigation measures which apply to adverse impacts identified for one or more of the alternatives are described below. Table III-11 presents the impacts, applicable measures, and the effectiveness of mitigation.

1. Maintain and/or relocate existing water sources utilized in support of previous grazing leases on a regular basis where identified. Work cooperatively with California Fish and Game Department, through a cooperative agreement to insure manpower and funding for this maintenance.

2. Areas developed for new water sources will be developed with minimal disturbance of natural vegetation and soils and done so under general landscape design features.

3. Reseed the 400 acres of that portion of the existing seeding project in the Oriflamme allotment currently in poor condition with native plant species to protect the soil base from erosion. Fence the reseeded project to restrict cattle use.

4. Burned and plowed areas will be fenced for two growing seasons to reduce vegetation reduction and soil disturbance.

5. Fencing water troughs and any salt or mineral blocks will be located in areas of less than 30% slope.

6. Population control measures for deer (by hunting) and bighorn sheep (by removal and/or transplanting) will be carried out to control wildlife grazing pressure.

7. When fences are constructed, gates, crossings, cattleguards, and gap fences (where appropriate) will be provided.

8. Establish amenable time frame for removal of personal property of livestock operators associated with the grazing leases to be terminated within acceptable terms and conditions provided in title 43 CFR 4160.

9. As part of the monitoring system conduct inventories to determine the impacts of livestock grazing on identified sensitive plant species. If detrimental effects are observed then livestock numbers or periods of use may be, where appropriate, adjusted on some allotments or pastures within allotments.

10. Provide a phase three year period to make season-of-use changes.

11. Pursuant to section 106 of the National Historic Preservation Act and Paragraph 2(b) of Executive Order 11593, the California State Historic Preservation Officer and the Advisory Council on Historic Preservation will be provided documentation and allowed to comment prior to the implementation of all sections which might adversely affect cultural resources eligible for inclusion on the National Register of Historic Places.

12. To insure that heretofore unknown cultural resources are not impacted by the selected alternative and to quantify ongoing impacts to known cultural resources, a monitoring program will be established. This program will have two major goals:

a. To insure that specific developments will not impact unknown resources, a professional archaeologist will monitor construction, with the authority to halt construction. Any cultural resources encountered will be dealt with in accordance with applicable law and regulations.

b. To assess ongoing impacts, a general monitoring program of a number of different site types in different areas will be conducted. These sites will be revisited periodically to assess ongoing impacts, to suggest additional mitigation measures, and to insure survival of the cultural data base.

13. Pursuant to the Rangeland Memorandum of Agreement between BLM and the Advisory Council on Historic Places, a Class II (sample survey) study will be conducted on each burning area prior to project implementation. Depending upon the Class II results, certain areas may be avoided and sites may be mitigated as outlined in numbers 1-3. Based on the nature of the resource base in the specific area to be burned, season of burning will, if necessary, be adjusted to lessen heat and impacts to sites.

14. Coordination with the professional archaeological community will be maintained. Those areas subjected to prescribed burning will be identified to the archaeological clearing house for San Diego County so that future investigators in those areas may be aware of possible burning impacts as outlined in Chapter 3.

TABLE III-11
EFFECTIVENESS OF MITIGATION

Adverse Impact	Applicable Mitigating Measure(s)	Alt. 1	Alt. 2	Alt. 3	Alt. 4
WATER RESOURCES					
1. Due to location and poor maintenance, existing water source and developments have become largely deteriorated.	1, 2	1. The extent of impact is significant and although measures proposed would be moderately successful in detering stated impacts, funding, and manpower is questionable. Therefore, overall reduction is anticipated to be slight or at low success.	1. The extent of impact is significant and measures proposed would be highly successful. Funding and manpower will be provided. Therefore, overall reduction is anticipated to be high.	1. See Alt. 2	1. See Alt. 2
2. Lack of sufficient water sources may cause overuse of some springs and/or developed sources. Development of new sources may cause vegetation and soil loss.	2	2. Measure will be highly successful in reducing stated impact because no new water sources hav been provided in recent years under court mandated procedures.	2. There will be significant improvement in impact reduction under intensive use due to increased manpower and funding. This is anticipated due to the BLM's actions under intensive management for livestock grazing in conjunction with full implementation of AMPs and HMPs.	2. See Alt. 2	2. See Alt. 2
SOILS					
3. Four hundred acres of the seeding project in Oriflamme are in poor condition with disturbed soils and a high erosion rate.	3	3. Estimated soil erosion will be reduced 80%.	3. NA	3. NA	3. NA
4. Mechanical treatment and prescribed burning will temporarily increase erosion potential.	4	4. NA	4. Estimated 30-50% soil loss reduction.	4. See Alt. 2	4. See Alt. 2

		REDUCTION DUE TO MITIGATION			
Adverse Impact	Applicable Mitigating Measure(s)	Alt. 1	Alt. 2	Alt. 3	Alt. 4
5. Heavy use of forage and soil compaction will occur around fencing and water troughs.	5	5. NA	5. Soil erosion will be reduced 30%.	5. See Alt. 2	5. Soil erosion in these sites will reduce by 10%.
VEGETATION					
6. Heavy grazing, by wildlife, is known to occur in select areas of their habit. With expected increases in wildlife populations, sensitive plant species will have increased trampling and grazing pressure.	6	6. Sensitive plant species and and flora would be maintained at levels necessary to continue reproduction. Therefore, this measure will be moderately effective.	6. See Alt. 1	6. See Alt. 1	6. See Alt. 1
7. Fencing to prevent livestock trespass, on public land, will on occasion block access roads and trails to wildlife, livestock operators and recreationists.	7	7. This will vary depending on the location of fences and its disturbance on wildlife movement patterns. However, restriction of movement will be moderately reduced.	7. See Alt. 1	7. See Alt. 1	7. See Alt. 1
8. Personal property (i.e., fencing material, pipe and troughs) of livestock operators would be impounded.	8	8. Livestock operators will be able to retrieve some of the original capital outlay for putting in these materials. However, this will be of low effectiveness because of time and labor costs involved in removing these materials and depreciation of materials depending on how long they have been in use.	8. NA	8. NA	8. NA

		REDUCTION DUE TO MITIGATION			
Adverse Impact	Applicable Mitigating Measure(s)	Alt. 1	Alt. 2	Alt. 3	Alt. 4
9. Implementation of AMPs will increase the occurrence of trampling and occasional sampling of a sensitive plant species known to occur in areas easily accessible to livestock.	9	9. NA	9. Measures would be moderatly effective in maintaining "sensitive plant species" at levels necessary to continue reproduction.	9. See Alt. 2	9. See Alt. 2
10. Nine allotments will be adversely affected by period-of-use changes.	10	10. NA	10. This measure would lessen the economic burden but only moderately because this change will never completely remove the potential economic hardships.	10. See Alt. 2	10. See Alt. 2
CULTURAL					
11. Numerous sites would be impacted by trampling.	11, 12	11. NA	11. Fencing will reduce trampling impacts by 100% on those sites fenced, as additional impacted sites are identified, mitigation will be conducted.	11. See Alt. 2	11. See Alt. 2
12. Cultural resources could be affected by the construction of pipelines, fencelines, water facilities and other developments.	11, 12	12. NA	12. 100% reduction if sites are avoided, if sites must be salvaged, a 50-75% reduction could be expected.	12. See Alt. 2	12. See Alt. 2
13. Numerous sites will be affected by burning.	13, 14	13. NA	13. 10-50% reduction depending on survey results. While not preventing impacts, this measure will reduce destruction of archaeological data as described in Chapter 3.	13. See Alt. 2	13. See Alt. 2

REDUCTION DUE TO MITIGATION

Adverse Impact	Applicable Mitigating Measure(s)	Alt. 1	Alt. 2	Alt. 3	Alt. 4
VRM					
14. Vegetation line contrasts created by fence construction in locations with dense, even-aged stands of chaparral.	15	14. Maintains vegetation base to reduce lines created by fence construction as regrowth would be faster. Also soil would not be exposed, thereby preventing the formation of vegetation/soil lines. Soil erosion would be reduced.	14. NA	14. See Alt. 2	14. See Alt. 2
15. Prescribed burning to allotment boundaries on fence lines would create moderate to strong vegetative line, color and textural contrasts in the San Felipe Hills, Julian/Banner and McCain Valley units.	16	15. NA	15. Prescribed burns would simulate natural appearing clearings. Vegetative line and textural contrasts would be reduced to weak levels. Vegetative color contrasts would drop to weak levels as regrowth takes place.	15. See Alt. 2	15. See Alt. 2
16. Marked vegetative lines would be created from fuel-break construction. Most prominant contrasts would be created in the Julian/Banner unit as prominant viewing locations are from above and to the west and north of the land treatment.	17	16. NA	16. Extensive fuelbreaks would not be necessary. Protection of west and north facing slopes would reduce contrasts from observation points along San Diego County Highway S1.	16. See Alt. 2	16. See Alt. 2
17. Moderate to strong vegetative color and texture contrasts created along McCain Valley Road as the prescribed burn is planned to the road right-of-way.	18	17. NA	17. Prescribed burns would be screened from view by intervening vegetation.	17. See Alt. 2	17. See Alt. 2

15. Minimize the removal of vegetation for fence construction needed for fencing off private lands to prevent grazing. This will reduce potential vegetative line contrasts. Thinning or pruning is preferable to outright removal of vegetation. This is especially critical in areas where proposed fence lines are located on steep slopes where viewing angles approach 90°, e.g., San Ysidro Mountains, Oriflamme, and San Felipe Hills management units.

16. Plan prescribed burns to burn in irregular shapes (mosiac) rather than burning to allotment boundaries or fence lines in order to simulate natural openings.

17. Carry out prescribed burns using heli-torch or similar technique to minimize the necessity of fuelbreak construction on north and west facing slopes in the Julian/Banner area.

18. Where viewing angles are normal, or nearly so, and roads cross areas proposed for treatment, such as in McCain Valley, leave vegetation along the road shoulder intact.

UNAVOIDABLE ADVERSE IMPACTS

Grazing Alternative 1 - No Grazing

The loss of water available to wildlife will continue until manpower and funding is appropriated to maintain and/or relocate water sources. Where manpower and funding are not appropriated, this impact will continue. Despite mitigation, encroachment of brush and shrub species on perennial grasslands will continue. No increase in vegetative production will occur. The number of acres in poor condition will increase in the In-Ko-Pah, Mt. Tule, and McCain Valley Allotments. An overall declining trend in range condition will result. Construction of boundary fences will create short-term disturbances of approximately 40 acres of vegetation. Access to public lands may be lost since it is livestock operators who maintain many of the roads into and through public lands. Access will also be reduced by fencing erected on public land boundaries to prevent cattle trespass from private lands. Operators will be required to obtain 4,925 AUMs of forage from other sources. Beef production in San Diego County will be reduced by 410 animals out of 23,000 head. Sufficient private rangeland is not available to fully replace the loss of public land forage. Total replacement value would be $50,000 to $138,000. Moderate vegetative color contrasts will remain within the area of the existing land treatment in the Oriflamme unit.

Grazing Alternative 2 - Intensive Use

Two and a half miles of riparian habitat will continue to deteriorate with subsequent adverse impacts on wildlife forage and nesting habitat. These areas include Pepperwood Canyon, Bow Willow Canyon and Chariot Canyon. The construction of 73 miles of fence will permanently remove 71 acres of vegetation. Water source development will remove an additional 18 acres. Trampling of vegetation around water sources will continue. One plant species of management concern

(Lilium fairchildii) may be impacted by grazing and land treatments. A short-term loss of 1,137 AUMs will require operators to obtain forage from other sources until monitoring determines that range condition has achieved present livestock use levels. Grazing systems will cause short-term weigh losses and disorientation because of alterations in grazing patterns and preferred use areas. Operators will incur an increase in herding and project maintenance costs. Bighorn sheep will be reduced 50 percent by the year 2001. Additional pressure will be placed on the sheep population. Small birds and mammals will be reduced to less that 10% of their potential due to increased cattle use of riparian sites. Minor impacts due to trampling of cultural sites will continue, especially around waterholes. Prescribed burning will cause thermal fracturing of some artifacts, possibly precluding certain types of analysis (thermoluminescence), and may affect interpretation of impacted sites. Construction of facilities will have severe, but localized, impacts on sites. Weak vegetative color contrasts will remain in San Felipe Hills, Julian/Banner and McCain Valley units. Such contrasts will continue to decrease over time as vegetation regrows. Moderate vegetative color contrasts will remain within the existing land treatment in the Oriflamme Unit.

Grazing Alternative 3 - Proposed Action

Vegetative disturbance around water sources will be unavoidable but will be at a lower rate compared to alternative 2. Fence construction will remove 65 acres of vegetation from production. Water developments will impact 18 acres. Trampling will continue around water sources. Operators will be required to obtain 1,627 AUMs of forage from outside sources to replace those lost when full implementation occurs in 1985. Grazing will remain below present levels until monitoring determines that production equals present use levels. Grazing systems will result in short-term weight losses and disorientation due to alterations in grazing patterns and preferred use areas. Due to a long-term decline in forage production, livestock performance will decline on the Mt. Tule Julian and San Felipe allotments. Overall, operator herding and project maintenance costs will increase. Bighorn will not attain the population density goal established by the McCain Valley Wildlife Habitat Management Plan of 5.0 sheep per square mile. No other significant adverse impacts on wildlife are anticipated.

Adverse impacts on cultural resources from trampling and burning and on visual resources will be as described for grazing alternative 2 although at a less intensive scale.

Grazing Alternative 4 - Limited Use

Operators will be required to obtain 1,933 AUMs to replace those lost under full implementation in 1985. Grazing will remain below present levels until monitoring determines production equals present use levels. The adverse impacts on livestock performance, operator costs, cultural resources and visual resources will be as described for grazing alternative 2, although to a lesser degree.

Grazing Alternative 5 - No Action

Water quality will decline at springs due to continued heavy grazing use. Forage production will gradually decline on all allotments except Oriflamme and In-Ko-Pah due to grazing over capacity and chaparral encroachment. Range in poor condition will increase from 34% to 40%. Livestock performance and production will continue to decline as forage is depleted. Riparian habitat will also continue to decline due to uncontrolled grazing use.

Limited maintenance of fences will continue to impact 25 acres of vegetation. Continued use of existing water sources will continue to impact 60 acres of vegetation. Bighorn sheep will decline from 100 to 75 animals and will continue to be unstable. Cultural resources impacts will continue at their present intensity. Trampling in heavy livestock use areas (i.e., water sources) will continue to damage sites located there. Adverse impacts on recreation will occur where livestock and humans occupy the same area and will involve health, sanitation and safety hazards. These impacts will be most severe in the three developed campgrounds and in the Lark Canyon ORV Use Area in McCain Valley. The potential for livestock-vehicle accidents in Lark Canyon will increase when the McCain Valley Recreation Activity Management Plan is implemented. Adverse impacts on visual resources will be as described for grazing alternative 1.

TRADE-OFFS BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

The most significant trade-off involves the proposed reductions in livestock use in most allotments in grazing alternatives 2, 3, and 4. This short-term negative impact on operators will result in long-term enhancement of all resources, improving wildlife habitat, increasing livestock forage production and allowing a rise in livestock use above present levels by the year 2001 in most allotments.

Prescribed burning in grazing alternatives 2, 3, and 4 will initially increase erosion by eliminating ground cover, removing up to 13,000 acres from livestock use for at least two growing seasons, and create significant visual impacts. However, in the long term, forage production will rise, range condition will improve, and vegetative cover will increase, allowing additional livestock grazing and decreased surface erosion. Long-term enhancement of deer habitat will also result.

Continuing present management under grazing alternative 5 will maintain present stocking levels in the short term. However, long-term productivity and range condition will decline due to continued overgrazing, as will wildlife, especially peninsular bighorn.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Lands proposed for range improvement facilities will result in a small loss of soil due to disturbance and soil loss due to erosion on some sites. Consumptive use of water for livestock and wildlife will result in an irreversible loss of water in support of those populations in the area. Vegetation destroyed as a result of proposed range improvements such as fences, pipelines, and water placement facilities such as troughs and storage tanks will be for the most part irretrievable. Cultural resources altered by construction or excavation would be irretrievably lost. No additional information related to the resources beyond what was collected before their removal or destruction will be available. Any permanent scarring or removal of the general topography, rocks, soils, and general geological features of the area will constitute an irretrievable loss of natural landscape, thereby adversely affecting visual resources. Regarding recreation resources, the only irretrievable and irreversible commitments will be those recreation opportunities lost due to such things as displacement of wildlife, restrictions on access, camping use, and sightseeing activities. Social and economic commitments would be the capital and labor invested in construction of range facilities and improvements. There would be an irretrievable loss to ranching lifestyle and income derived from grazing leases affected by reductions imposed for the period applied by grazing decisions.

WILDERNESS ALTERNATIVES

IMPACTS OF THE ALTERNATIVES

Introduction

The following discussion describes the impacts of designating any piece of land as suitable or nonsuitable for wilderness. A specific description is made of how each alternative, by area, deviates from the general description.

Any WSA found to be suitable for wilderness and so designated by Congress, will result in management within a discrete range of actions. Once suitability recommendations are acted upon, management will follow with the dominant objective being protection of the area's wilderness resources.

Therefore, recommending a WSA or portion thereof, as suitable should be interpreted to mean that BLM feels the wilderness values can be best protected, utilized, and managed as a wilderness area. The "Discrete Actions of Wilderness Designation" portion of Chapter I points to the fact that an agency's discretion in managing a parcel of land will be somewhat limited under wilderness designation. Generally, presuppression (e.g., fuelbreaks and prescribed burning) and post suppression fire control techniques, vegetative manipulations, introduction of exotic plants and animals and certain recreational activities (e.g., trail bike riding) and services (e.g., flush toilets) are precluded.

It should be understood that these prohibitive management techniques can produce impacts which may be viewed as positive or beneficial by some, such as reduced soil erosion, increased game and improved hunting success, increased area available for pursuit of undeveloped or primitive recreation. On the other hand, they may be viewed as negative impacts because of the lost opportunities for other more developed or commercial type pursuits. Under the dominant objectives for wilderness management these will be protection of natural ecological succession, thereby, providing opportunities for research on plants and wildlife, watershed management and soil erosion control. Sensitive plants and wildlife (e.g., peninsular bighorn sheep) that may be adversely affected by concentrated uses, vegetative manipulations, etc., will be protected as are cultural resource and Native American values. Opportunities for solitude and primitive recreation are provided where the evidence of man is substantially unnoticed.

As was mentioned in Chapter I, mineral entry and mining can occur within a wilderness area. Likewise, grazing operations in existence, at the time of designation, may continue within a wilderness area. Congress has mandated that these activities do not have negative impacts upon wilderness.

A WSA, or portion thereof, is recommended as nonsuitable for designation when it has been determined that the area in question is best suited for management and use other than wilderness to allow for broader utilization of resources. These areas permit the use of management techniques that are prohibited in wilderness areas. Implicit to a nonsuitability recommendation is that the wilderness qualities of an area presently may be impaired to a degree that would preclude reconsideration of wilderness suitability in five years (projected time frame for the development of a resource management plan (RMP)), whereas other resource decisions could be modified as MFP amendments. This will not be possible for wilderness. This will result in a lost opportunity for exclusive wilderness use. The impact on all other resources must be considered as neutral because they have neither been specifically impaired nor enhanced by this recommendation. Determination as to positive or negative impacts on other resources will be made later through an environmental assessment, when the discrete actions are proposed on these areas.

The majority of the existing or proposed grazing allotments fall outside the WSAs and, therefore, will not be discussed. An overview of the effects of suitability and nonsuitability on these allotments where there is overlap, or where the proposed grazing systems fall outside but have a direct effect upon the WSAs, is presented in Table III-12. There will be no reiteration of these impacts in the narrative analysis of each alternative.

TABLE III-12

WILDERNESS IMPACT SUMMARY
MATRIX FOR SUITABILITY/NONSUITABILITY BY ALTERNATIVE

Alternative	Suitability	NonSuitability
1. No Grazing	No new range developments (i.e. fences water and land treatment) are provided, maintenance of existing water developments for the benefit of wildlife are hindered by wilderness restriction. Undesired vegetative types will not be utilized or have their encroachment impeded by grazing management techniques or measures.	There will be little seedling reestablishment of grass species, no edge effect on existing seeding areas, chaparral invasion continues. Increased fire hazard. Vegetation moves towards climax, which will be adverse for most wildlife species. There will be increased use by ORVs which will be a positive impact for recreation use although the quality of this activity will be hindered by accessibility due to private land access closures by previous livestock operators.

2. Intensive Use	Designation will impact all of San Felipe and Vallecito allotments and new allotment B, and approximately 2,100 acres (70%) of new allotment A, 8,400 acres (85%) of Canebrake, 1,000 acres (20%) of Mt. Tule, 10,000 acres (65%) of In-Ko-Pah, 1,600 acres (10%) of Tierra Blanca allotments. There will be significant impacts to grazing systems since designation will prohibit or hinder significant vegetative manipulation and treatments. For example, prescribed burns in the San Felipe and Canebrake allotments will not occur unless they will enhance wilderness values. Establishment of new allotments A and B, and expansion of existing allotments (such as the 400 acres to be added to Vallecito) will only occur prior to designation. All facilities and treatments will be subject to strict VRM Class I guidelines. Closure of roads within the	There will be none of the conflicts with grazing described in the suitability section. However, human intrusions on grazing would increase. Unrestrained facility construction and treatment application will cause incremental degradation of wilderness quality, and possibly impair opportunity for future wilderness designation.

	Vallecito allotment will limit operator access. However, proposed facilities will greatly enhance such wilderness values as vegetative cover, erosion protection, water quality and wildlife, and will do so to the greatest extent of any alternative.	
3. Proposed Action	Designation will impact the same allotments as under alternative 2 with the following changes: 2,000 acres (25%) of In-Ko-Pah. New allotment A is not proposed. Impacts will be same as for alternative 2 except to a lesser degree. Treatments and facilities will be implemented to a lesser extent as described in Chapter I grazing treatment section. Only new allotment B will be introduced prior to designation. This alternative will provide the least amount of adverse impacts resulting from positive suitability determination. Under this alternative, positive measures to improve habitat for wildlife, improve	No restrictions are placed on grazing facility developments or treatments. However, this determination will increase chances for degradation of wilderness values. This adverse impact in wilderness values will be slightly less than as described under alternative 2.

	water sources, and modify grazing levels will be implemented.	
4. Limited Use	Impacts will be similar to those identified under alternative 3 but to a lesser degree. No new allotments will be allowed. About 2,656 acres will be eliminated since they occur in new allotment B and 2,000 acres will be eliminated from the In-Ko-Pah allotment which is in the Carrizo Gorge WSA.	Virtually no restrictions on grazing will result from this determination. There will be less degradation of wilderness quality due to grazing and this degradation, due to grazing improvement facility construction, will occur at a lesser degree than under the proposed action. Since less intensive grazing management is applied, a slower degradation of wilderness due to man-made intrusions occurs.
5. No Action	Under no action for grazing, all existing allotments will be allowed to continue at present use levels. No rehabilitation measures for range improvement will be provided. Past carrying capacity for livestock was based on all public land acres in the planning unit without regard to grazing suitability criteria. Therefore, grazing over current inventory capacities will continue.	Impacts will be the same as under suitability designation. There will be higher degradation of wilderness values.

Wilderness Alternative 1 - Maximize Wilderness

Inclusion of these areas as wilderness will lessen the adverse impacts upon cultural resources. Vehicle access will be eliminated thereby removing additional ORV damage to sites.

Prohibition of motor vehicle access will have both positive and negative impacts on cultural resources. Lack of access may limit patrol of some areas and make the enforcement of vandalism laws more difficult. However, although most pothunting is done by persons using vehicles, they are unlikely to use them in wilderness areas due to the ease of detection. Furthermore, increased walking distances will discourage plundering of archaeological sites.

Wilderness designation may, in some cases, will inhibit scientific investigations of cultural sites since vehicle access would be prohibited. This could impact the cultural data base as a whole by limiting our understanding of that data base.

A San Ysidro Mountain (2,131 acres) wilderness designation will have no impact upon rockhounding, hunting, and sightseeing. These activities could continue at their present level. A negative impact will occur to off-road vehicles from the loss of opportunity to use the area. Hikers and equestrian users will receive positive impacts from the proposed Hellhole Flat hiking trail by providing access to a nearly inaccessible region of Anza-Borrego Desert State Park. This will be supportive of the long term planning for the State Park. Also, four miles of trails will provide primitive recreational use and this will have a negative effect upon the area because the topography will limit use to a narrow band of land. On the trail itself this concentration of use will negatively affect the wilderness qualities through compacting the soil, trampling the vegetation, and reducing the solitude of visitors to the area.

Impacts on existing visual resources will be negligible. However, VRM Class I designation will severely limit what might otherwise occur under the present Class III guidelines. Class I restrictions will impose definite limits on potential management actions within the WSA.

Vehicle ways and other cultural modifications will have to be removed or rehabilitated on a case by case basis to meet VRM Class I guidelines.

A San Felipe Hills wilderness (5,265 acres) designation will negatively impact ORV use by closing three miles of existing trails. No impacts are anticipated for rockhounding, sightseeing, and hunting. A positive impact will be provided by maintaining the quality of hiking and equestrian use. The area has had a history of wildfires. The recent accumulation of fuels combined with a prohibition against prescribed burning could have severe adverse impacts upon neighboring ranches due to the increased hazard for fire in the area.

As long as the area is open to mineral entry under the mining laws of 1872, the naturalness of the area is subject to prospecting and mining developments. Existing abandoned claims within the study area demonstrates impacts attributed to mining activity.

Impacts on visual resources will be as described for Alternative I, except that limitations on potential management activities (such as prescribed burns which have been proposed in this area) will be even more severe since the WSA is presently designated VRM Class IV.

A Sawtooth Mountains (31,097 acres) wilderness designation will negatively impact ORV use by prohibiting their operation within the area. Indirectly, rockhounding, hunting, and sightseeing will be adversely affected because designation would affect accessibility to these areas. Concurrently, the lack of easy access will reduce hunting pressures on existing game which in turn could increase the rate of hunting success.

Recreation development in the Vallecito Valley will be precluded by wilderness designation.

The Sawtooth Mountains has been recommended for reintroduction of the peninsular bighorn sheep. The reintroduction will require the use of motorized equipment and drilling to establish water sources. There are legal questions if these requirements occur within wilderness areas. If motorized equipment could not be used, the recommended reintroduction of peninsular bighorn sheep will be affected adversely, thereby, reducing the opportunity to view bighorn in the area.

Part of the Sawtooth's are within the boundary of the Laguna-Moreno Demonstration Area (joint cooperative project involving various State and Federal Agencies) for the prevention of catastrophic fires. The use of prescribed burns will be allowed only if such actions are shown to have an overall positive impact and contribute to the improvement of the area's wilderness resources. If prescribed burning is not allowed, this will result in a negative impact to the Demonstration Area's planned techniques.

Recreation regulations will be developed to protect the wilderness resources, to provide visitor safety and to serve as a management tool for reducing conflicts between users. In addition, public access to Vallecito Valley will be acquired. Vehicles will be able to drive to an entry point at the edge of the wilderness area. Visitors will be able to travel between the Sawtooth Wilderness Area and Anza-Borrego Desert State Park within Vallecito Valley. This will provide a positive impact by providing access for BLM administration in the Sawtooth area. It should be noted, however, unless strictly regulated, access will increase the frequency of conflicts between vehicle users and wilderness users. Vandalism and harassment of livestock operations, which is a current problem, will continue and increase. Enforcement of vehicle restrictions within the wilderness area will be required. The improved access will be a benefit for hunters.

The Sawtooth Wilderness Area contains sensitive plants such as Opuntia bigelovii var. hoffmanii and Cassia covessii. Wilderness designation will reduce the potential for adverse impacts on these plants. However, the area has considerable dense chaparral ecotypes and the unnaturally dense chaparral growth resulting from years of fire suppression is eliminating plants that require a more open environment. The general prohibition against prescribed burns will adversely affect the intolerant plants.

Impacts on existing visual resources will be negligible. The area possesses good to outstanding scenic quality with few cultural modifications. Only natural/ecological changes to this environment will be permitted, with some degree of flexibility allowed for actions statutorily permitted by the Wilderness Act, such as grazing fences, livestock waters, and limited surface disturbance in support of mining activity. When necessary, rehabilitative measures will be taken where intrusions (vehicle roads and ways, and buildings associated with private inholdings to be acquired) occur. In the case of the vehicle access route into the Inner Pasture region of the Sawtooth Mountains (VRM Class III); if Congress provides a special dispensation for the route, this existing modification would also meet the requirements of the specific enabling legislation for wilderness and would be consistent with wilderness management. In all situations, actions will have to be mitigated to meet VRM Class I requirements.

A Carrizo Gorge (14,573 acres) wilderness designation will have no impact on off-road vehicle use because the area is currently closed for the protection of the existing peninsular bighorn sheep herd. No adverse impacts can be foreseen for sightseeing, rockhounding or hunting. Three proposed vehicle overlooks of the Carrizo Gorge will not be developed. These three unique vistas together would have required approximately two acres of land within the wilderness area.

Primitive recreation will be enhanced by protecting the area in a natural state. The enhancement of primitive recreation qualities will be complementary to the management of Anza-Borrego Desert State Park.

The proposed Bow Willow hiking trail will have no adverse impacts as a result of this alternative.

Prescribed burns will occur only when they positively improve the wilderness resources. Fuels will continue to accumulate in chaparral ecotypes and the potential for catastrophic fires is increased. The absence of prescribed burns will adversely impact plants that cannot compete with the increasing density of the chaparral community. As was the case in the Sawtooth Mountains Wilderness Area, sensitive plants will benefit from protection afforded by wilderness management.

There will be no negative impact on bighorn sheep since present water sources will not require vehicular maintenance. Wilderness designation will have a very positive effect in protecting the bighorn sheep habitat.

Impacts on visual resources and impacts of VRM Class I designation will be as described for the Sawtooth area.

No other resource decisions in MFP Step 2 will have negative impacts upon wilderness. Wilderness designation will have no additional negative impacts upon other resources.

A Table Mountain (958 acres) wilderness designation will reduce the amount of land available for cross country ORV use. There will be no adverse impact upon hunting, sightseeing, and rockhound. Hiking and equestrian uses will be protected from encroachment by non-compatible developments and uses. Currently, there are no mining claims within the area that have been filed with the BLM, but extensive prospecting and some mining have occurred in the vicinity in the past. No adverse impacts can be anticipated.

Impacts on visual resources and impacts of VRM Class I designation will be as described for the Sawtooth WSA.

Wilderness Alternative 2 - No Wilderness

This alternative would indirectly adversely affect cultural resources by allowing continued grazing, ORV use, and other factors which directly impact cultural resources as described for the grazing alternatives.

The major impact of a nonsuitability determination on the San Ysidro Mountain (2,131 acres) would be that the WSA will not become a part of the National Wilderness Preservation System (NWPS). In this case, the MFP recommends disposal of the entire block to one or more parties. Otherwise, the BLM will continue administration. Under present management recommendations the Hellhole Flat hiking trail will be constructed to provide access to a remote section of Anza-Borrego Desert State Park. Recreational emphasis will be placed upon hiking, backpacking, horseback riding, rockhounding, hunting, and sightseeing. This will result in an adverse action due to infringing overuse and sanitation problems upon some aspects of wilderness values. The "cures" for these problems (e.g., providing sanitary facilities) will in themselves result in impacts on the areas naturalness.

Under proposed management a new grazing allotment will be added and water developments will be constructed with motorized equipment. The developments, evidence, and concentration of livestock use will leave the imprint of man substantially noticeable. These impacts could result in elimination of the area from further wilderness consideration. The area will remain open to prospecting, mining developments and patenting claims under the Mining Law of 1872. Though not planned in the MFP, vegetative manipulations may occur for wildlife enhancement as well as presuppression and post suppression fire management. All of these activities will degrade the solitude and naturalness of the area.

The major impact of a nonsuitability determination on the San Felipe Hills (5,265 acres) is that the land would be recommended for disposal. This will also exclude the area's inclusion in the NWPS.

If the entire unit cannot be disposed of, the BLM will continue administration. Emphasis will be placed upon undeveloped recreation such as hiking, camping, off-road vehicle travel, rockhounding, sightseeing and hunting. New roads may be created that divide the San Felipe Hills into parts less than 5,000 acre minimum wilderness area acreage.

The existing grazing allotment will continue operation. After installation of proposed new fences and water developments, the naturalness of the area will be in question. Of serious concern to adjacent ranchers is the threat of fire. Future presuppression and post suppression techniques may be instituted that will provide improved fire protection, but will reduce the area's naturalness. These activities will adversely affect the wilderness character of the area. Potential mineral development will be the greatest concern for degradation of the area's naturalness.

Nonsuitability determination on the Sawtooth Mountains (31,097 acres) will have no adverse impact upon future consideration of the area for wilderness in terms of any proposed land tenure adjustments.

The major impact of a nonsuitable determination will be upon the planned reintroduction of peninsular bighorn sheep. Under nonsuitability there will no longer be any restrictions for developing wildlife water sources or for the use of motorized vehicles to carry out this work. However, increased activity allowed under nonsuitability will have adverse impacts upon reintroduction success due to these disturbances of their habitat and by the presence of man. In addition, the bighorn sheep reintroduction program will be adversely affected by the planned acquisition of a public access to Potrero and Storm Canyons. This will result in increased ORV activity and increases in the number of hunters, rockhounders, and sightseers in the area, which will place more stress upon the introduced animals.

Mineral entry and development after 1983 could also cause the disturbances to sheep habitat. If mineral activity occurs, it could bisect the sheep habitat with barriers that are impassable for bighorn sheep and leave pockets of habitat that are too small to sustain a herd.

The portions of the Sawtooths that lie within the Laguna-Moreno Demonstration Area will be adversely impacted by prescribed burns and associated firelines. In addition, new fuelbreakes will be established. These activities could substantially degrade the area's naturalness without degrading the overall quality of the environment.

Since this alternative does not recommend the acquisition of the Spencer Ranch or the 47 acre privately owned parcel in Protrero Canyon, developments can occur on these lands that will require more substantial access and distribution lines than presently exist. These developments will preclude future acquisition and rehabilitation if the area is reconsidered for wilderness potential. Without acquisition, these private inholdings could seriously impede wilderness management.

The Pepperwood Hiking trail will be developed to provide access to the Canebrake Valley from the Laguna Plateau. From the trail end, cross country travel will provide an intertie with Anza-Borrego Desert State Park for horseback riders and hikers.

Grazing will continue at the same level as present, but more extensive water developments may be established. Water developments such as construction of water storage tanks in Potrero Canyon will impede the natural landscape character of the area.

Few impacts are anticipated from nonsuitability designation of the Carrizo Gorge Area (14,573 acres). The BLM will continue to administer the area for the protection of the existing herd of peninsular bighorn sheep. MFP Step 2 recommends that the area be withdrawn from mineral entry to protect bighorn habitat. The peninsular bighorn sheep is a California rare mammal and the habitat within the area will, under this alternative, be proposed as an area of critical environmental concern (ACEC),known as the Carrizo Bighorn Natural Area. Assuming the area is established as an ACEC and managed as such, adequate management and protection would be provided and no adverse impacts on wilderness resources will result from the nonsuitability designation.

A small portion of the unit has been proposed for ACEC designation as an archaeological reserve zone to protect its cultural values. The Bow Willow Palms Outstanding Natural Area (ACEC designation) will protect this stand of palms. As in alternative 1, the Bow Willow Hiking trail will be developed to reduce the hazards in visiting the palms. Nonsuitability will not adversely impact these values.

Approximately two acres of the Carrizo Gorge unit will be used for the development of three vehicle viewpoints. No equal substitutes exist for these unique views of the Carrizo Gorge and the Salton Basin. Soil and vegetation disturbances will affect the natural quality of the area in an adverse manner.

Proposed developments include new water developments for the area. These developments benefit bighorn sheep and are also beneficial to grazing operations. One new grazing allotment is proposed in the southern portion of the unit.

New allotment B would be established under the BLM Interim Management Policy and Guidelines for Land Under Wilderness Review and will be an existing use at the time of designation. The impact of new water developments and new grazing areas are not anticipated to be adverse to wilderness values.

Nonsuitability designation for Table Mountain (958 acres) in relation to proposed uses under the land use plan provides potential for adverse impacts. Mineral entry and development will still be possible. Extensive prospecting has occurred in the vicinity. Leasing for geothermal exploration and development will be promoted. If exploration and development occurs, the equipment used will have detrimental impacts on the wilderness values of this area. If the magnitude of the impacts is significant, substantial evidence of man will exist in the area, thereby precluding future consideration as wilderness.

Designation of a limited area for off-road vehicle use will result in deterioration of the southern 250 acres. ORVs will be allowed some use in this area and occasional violations will result in additional vegetative loss, soil compaction and erosion. These impacts will present intrusions on the wilderness resource. The extent is expected to be limited, but due to the slow rehabilitation prospects of damaged areas, the negative impacts will be highly detrimental to wilderness values.

Wilderness Alternative 3 - Proposed Action

The entire San Ysidro Mountain unit (2,131 acres) is recommended as nonsuitable for wilderness designation. The impacts for this alternative are identical to those presented under Alternative 2 except that no new grazing allotment is proposed. Impacts attributed to grazing will not occur. In general, positive impacts described under vegetation for the proposed action under grazing alternative 3 apply and will result in beneficial impact to the natural landscape under nonsuitability. The MFP Step 2 recommended construction of a hiking trail across this parcel to allow access to Anza Borrego Desert State Park and nonsuitability will result in a positive impact on this action since this type of development will conform to objectives for the proposed action alternative.

The entire San Felipe Hills unit (5,265 acres) is recommended for nonsuitability under this alternative. The impacts described under alternative 2 except for the impacts attributed to implementation of new grazing allotment apply here. Due to the inability to effectively manage this area because of extensive scars from fires, continuous fire problems, intrusions such as ORV trails, the maintenance of wilderness values in this area will be extremely difficult and costly. Due to these factors the nonsuitability determination will provide an overall beneficial impact from a manageability standpoint.

Approximately 85% of the Sawtooth Unit (25,515 acres) are recommended as suitable for Wilderness Area designation. This will result in the same impacts as described in alternative 1, except that five miles of existing roads will remain open for use by ORVs and to allow the temporary placement of beehives on the wilderness area's perimeter.

The 47 acres, which are in a privately owned parcel in Potrero Canyon will be purchased and added to the Sawtooth Wilderness Area. Therefore, no negative impacts are anticipated from this inholding as far as manageability.

Impacts to other resources are identical to those described for alternative 1. A portion (5,582 acres) of the Sawtooths is recommended as nonsuitable for wilderness. No negative affects are anticipated for the reintroduction of the peninsular bighorn sheep. This area will be open to mining and mineral leases that will deteriorate the naturalness to such a degree as to preclude a future addition to the Sawtooth Wilderness Area. This area also contains that portion of the Laguna-Moreno Demonstration Area and will be subject to the same impacts as in alternative 2.

Exclusion of the NW portion of the WSA from the suitable area would result in impacts similar to those described in alternative 2. The acquisition of private lands within the area would serve to protect sites by limiting access as would the closure of certain roads. Allowing the Inner Pature and Canebrake Roads to remain open would allow access to numerous archaeological sites which may be impacted by pothunting and ORV use.

The impacts for the Carrizo Gorge Unit under alternative 3 will be the same as those described in alternative 1 with the following exceptions.

Two acres would be recommended as nonsuitable to allow for the development of three scenic vehicle overlooks proposed in the MFP Step 2. These lands are able to qualify as an addition to the 14,571 acre Carrizo Gorge Wilderness area.

Grazing will continue as part of the Tierra Blanca, In-Ko-Pah, Mt. Tule allotments. But grazing will be eliminated from the desert shrub vegetation zone within these allotments which are utilized by bighorn. In addition, the majority of the 3 existing allotments include a very limited amount of acreage within the Carrizo WSA boundary. This acreage occurs as an overlap along the eastern boundary of the allotments. New grazing allotment B (2,937 acres) will be allowed which is located at the southern end of the wilderness area. The new allotment will be established under the Interim Management Policy Guidelines for Wilderness Management existing use at the time of designation.

Wilderness Alternative 4 - Limited Wilderness

Under this alternative, the entire San Ysidro Mountains unit is recommended as nonsuitable for wilderness designation. The impacts are identical to those in alternative 2 except that no new grazing allotment will be developed nor will any impacts associated with developments of that allotment occur. There will be some negative impact insofar as maximum protection of wilderness values; however, under this alternative, positive impacts can also be attributed to management of the area's wilderness resources in a balance with other resource values and still maintain some protection of wilderness resources.

The entire San Felipe Hills unit is recommended as nonsuitable for wilderness and the impacts are identical to those in alternative 2. The same discussion of impacts from San Ysidro Mountain area previously described apply here.

The same basic impacts described in alternative 3 for the 24,810 acres recommended for suitability in the Sawtooth Wilderness Area apply under this alternative with two exceptions. First, approximately eight miles of roads in the Inner Pasture areas will remain open for use by ORVs. The road also affects use for the temporary placement of beehives on the perimeter of the wilderness area. Second, allowing a larger exclusion in the Potrero Canyon area will affect cultural resources by allowing continued grazing, ORV use, and other factors which will directly impact cultural resources as described for the grazing alternatives.

The entire 14,573 acres of the Carrizo unit are recommended as suitable for wilderness. The area's impacts will be identical to alternative 1 except that grazing will continue. Specifically, the Mt. Tule and Tierra Blanca allotments (except around Macho Spring) will continue grazing operations with no adverse impacts on grazing use expected. Most of that portion of In-Ko-Pah grazing allotment within the Carrizo Gorge WSA will be eliminated from grazing use. Approximately 2,000 acres of the In-Ko-Pah allotment will remain under the Carrizo Gorge WSA (see description for alternative 3 impacts).

The entire Table Mountain unit is recommended as nonsuitable for wilderness designation. The impacts will be the same as those described under alternative 2.

MITIGATION

Mitigating measures which apply to adverse impacts identified for one or more of the alternatives are described below. Table III-13 presents the impacts, applicable measures, and the effectiveness of mitigation.

1. Rehabilitate approximately 23 miles of existing vehicle roads, ways and overlook sites which cross or protrude into the San Felipe Hills (est. 7 miles), the Potrero Canyon (est. 6 miles), and Canebrake Canyon (est. 9 miles) regions of the Sawtooth Mountains, and Carrizo Gorge (est. 1 mile). Prior to initiating any rehabilitation program, consultations will be conducted with botanists, soil scientists, plant ecologists and landscape architects who have specific knowledge of the eastern San Diego County region.

2. If the Spencer Ranch is acquired, remove all buildings, foundations, and other associated developments from the canyon. Rehabilitate the ranch area to approximate the surrounding landscape. Rehabilitate the Spencer Ranch access road.

3. Impose strict limitations on the use of the access road leading to Inner Pasture.

TABLE III-13
EFFECTIVENESS OF MITIGATION

		REDUCTION DUE TO MITIGATION			
Adverse Impact	Applicable Mitigating Measure(s)	Alt. 1	Alt. 2	Alt. 3	Alt. 4
WILDERNESS					
1. Existing roads, ways and overlooks form vegetation line contrasts in otherwise pristine areas.	1	1. Rehabilitation of roads would remove scenic intrusions in the recommended WSAs. Proper ecological planning will insure successful rehabilitation efforts. VRM Class I requirements will be met.	1. NA	1. Same as Alt. 1 - except only 6 miles will be rehabilitated.	1. See Alt. 3
2. Existing buildings, foundations, and developments of the Spencer Ranch seriously conflict with visual requirements for VRM Class I areas. If acquired and included in the Sawtooth Mountain WSA, VRM Class limitations will not be met.	2	2. Removal and rehabilitation of ranch developments would enable the area to meet VRM Class I requirements.	2. NA	2. NA	2. NA
3. Inner Pasture road creates marked vegetative line contrasts in an otherwise natural area. The existence of the road does not meet VRM Class I requirements.	3	3. Restrictions of use of the road will keep identified contrasts to current levels. Future rehabilitative opportunities will be enhanced.	3. NA	3. See Alt. 1	3. See Alt. 1
4. Weak vegetative line contrast created by the construction of the Pepperwood and Hellhole Flat hiking trails.	4	4. Removal of vehicles and utilization of existing roads, ways and trails will permit vegetative growth. Mitigation measures utilized for the Pacific Crest Trail will insure visual impacts are held to a minimum.	4. NA	4. See Alt. 1	4. See Alt. 1

4. If the Pepperwood Trail and Hellhole Flat hiking trails are constructed, existing travel routes (existing roads, ways, and trails) will be employed as much as possible to reduce soil and vegetation removal. General mitigation measures used for the construction of the Pacific Crest Trail in the Whitewater and Julian sections will be utilized.

UNAVOIDABLE ADVERSE IMPACTS

Wilderness Alternative 1 - Maximize Wilderness

Mining activities will be visible and will reduce the quality level of wilderness areas. Grazing operations will also reduce the quality of the visitor's wilderness experience. The wilderness areas will be closed to off-road vehicle use and will have the maximum indirect impact of forcing prospectors, hunters, and rockhounders to walk an additional 6 miles. Fuel accumulations will be unnatural because fire suppression will continue and the prohibition against prescribed burns for fire management will prevent the natural periodic burning of the area. As a result, the chaparral will become thicker and deer browse will decline. Intolerant plants associated with early successional stages will be eliminated as the chaparral community expands. The fire danger within the wilderness area will remain high because of the accumulation of fuels. Due to anticipated fuel build ups, the severity of fires within the wilderness areas will be greater than if prescribed burns were conducted and the risk of fires spreading from the wilderness areas is increased. These very hot burns will have adverse impacts upon cultural resources and their interpretation. Developed recreational facilities (i.e., three scenic overlooks of the Carrizo Gorge) will not be developed within wilderness areas. Vegetative manipulations for the benefit of cattle and wildlife is also prohibited.

Wilderness Alternative 2 - No Wilderness

The only adverse impact will be that at a later date, the areas will no longer qualify for inclusion into the NWPS. San Ysidro Mountain and San Felipe Hills may no longer be in Federal ownership. All areas may receive developments that adversely affect existing wilderness resources. For example mining, pre- and post- fire suppression techniques will adversely affect the naturalness, size, and manageability of BLM administrated lands.

Wilderness Alternative 3 - Proposed Action

The areas recommended as suitable for wilderness designation (25,515 acres of Sawtooth Mountains and 14,571 acres of Carrizo Gorge) will have the same unavoidable adverse impacts as in alternative 1 except that three scenic overlooks of Carrizo Gorge will be established. The areas found as nonsuitable for wilderness (San Ysidro Mountain, San Felipe Hills, Table Mountain, 5,582 acres of Sawtooth Mountains and two acres of Carrizo Gorge) will have the same unmitigated impacts as in Alternative 2.

Wilderness Alternative 4 - Limited WIlderness

The unavoidable adverse impacts are identical to alternative 3 except that 24,810 acres of Sawtooth Mountains and 14,573 acres of Carrizo Gorge are recommended as suitable for wilderness designation.

TRADE-OFFS BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

Failure to designate all or portions of WSAs as wilderness areas will allow incremental degredation of the area's wilderness characteristics to occur. Opening the area in the short-term to multiple uses may, in the long-term, preclude the WSA from further consideration as wilderness.

Conversely, designation of a WSA as a wilderness area, will provide long-term protection of its wilderness characteristics. However, short-term uses, such as mining operations, will be prohibited.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Finding a WSA nonsuitable for wilderness designation would open the lands for use under the public land laws. The wilderness resource might be irretrievably lost if wilderness characteristics are impaired. Additionally, actions permitted under the public land laws (e.g., mining, rights of way, recreation and public purpose, etc.) might result in the irretrievable commitment of mineral, vegetative, botanical, cultural, and/or visual resources.

The designation of land as wilderness constitutes a long-term commitment of resources and land. Congress, however, can change the classification. Thus, wilderness designation can be considered neither an irreversible nor an irretrievable commitment of resources.

CHAPTER 4

CONSULTATION & COORDINATION

Chapter IV
CONSULTATION AND COORDINATION

The preparation of the Eastern San Diego County Grazing and Wilderness Statement was announced in a Notice of Intent to write the EIS published in the Federal Register of October 13, 1978. A team of resource specialists from the BLM California State Office, BLM Riverside District Office, and El Centro Resource Area of the Riverside District prepared the document. The team was in contact with other federal offices, state and local agencies, interested groups and individuals. Communications varied from formal written correspondence to informal personal contact and telephone calls. The Bureau of Land Management°s preparation of this document was and will continue to be covered in local, regional, and statewide media.

Consultation and coordination with the public received special consideration throughout the planning process and was an intregal part of the development of the proposed action and alternatives. The public participation process has ocurred in three phases: identification of publics and issues (Phase I); specific resource input (Phase II); and identification and analysis of management recommendations in MFP Step II (Phase III). A fourth phase, MFP Step III management decisions, will follow the completion of the final EIS. These steps are described in detail below.

Phase I of the planning process consisted of notifying by mail approximately 400 individuals, groups, agencies, and media of intentions to develop the land use plan and requesting comment and input. In addition a preselected group of 25 persons representing a wide range of resource interests were called together in March 1979 at Pine Valley, California and the nominal group technique was utilized to identify issues that should be addressed in the plan. This meeting identified all resources of consequence to the study area and in particular wilderness and livestock grazing values. After this meeting a letter was sent to each participant summarizing the results and what steps would follow.

In addition to the public contact and consultation associated with the Eastern San Diego Plan a statewide inventory of roadless areas for identifying Wilderness Study Areas was conducted which provided public input relevant to Wilderness resources in the study area. Public Hearings concerning the wilderness inventory were held in March 1979 in El Cajon, Ca., Hemet, Ca., and Los Angeles, Ca. Later, in August, 1979 public meetings were held concerning the Draft Report on the Intensive Wilderness Inventory in El Cajon, Ca., Hemet, Ca., and Los Angeles, Ca. These meetings afforded a substantial amount of public involvement concerning wilderness values of the study area as well as other areas of the region.

Phase II consisted of BLM resource specialist contacting peers, interest groups, and other agency representatives to solidify views on resource management opportunities, issues and management recommendations to be incorporated into MFP I. Some contacts were by phone, while others involved informal meetings, some of which were held locally while others were held in San Diego. Contacts included local four-wheel drive clubs, motorcycle clubs, equestrian groups, hikers, campers, hunters, rockhounds, the museum of natural history, California Department of Fish and Game, private consultants, California Dept. of Transportation, small prospectors, Sierra Club, Wilderness Society, Audubon Society, Desert Protective Council and grazing leasees.

Phase III of the planning process began with four public meetings to present the Eastern San Diego County MFP I recommendations and draft MFP Step II. The meetings were held November 1, 1979 at El Cajon, Ca., November 2, 1979 at El Centro, Ca., Nevember 3, 1979 at Pine Valley, Ca. and January 27, 1980 at Canebrake, Ca. Information obtained at these meetings was used as input in developing MFP Step II land use recommendations of the plan. These recommendations ultimately formed the basis of the proposed grazing and wilderness management alternatives, as well as other alternatives analyzed in the draft environmental statement. The public review and comment of this draft report and the subsequent final environmental report will end phase III. Phase IV will involve public announcement, review and comment on management decisions reached and ultimately implementation of the plan. Agencies and interest groups which will receive copies of the environmental statement and decision documents are shown on the list included in the cover sheet of this report.

List of Abbreviations

LIST OF ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
AMP	Allotment Management Plan
ASM	Archaeological Systems Management, Inc.
AUM	Animal Unit Month
BLM	Bureau of Land Management
CDCA	California Desert Conservation Area
CDF&G	California Department of Fish and Game
DR	Deferred Rotation
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESDC	Eastern San Diego County
FLPMA	Federal Land Policy and Management Act of 1976
GS	Grazing Systems
HMP	Habitat Management Plan
KOP	Key Observation Points
L-MDA	Laguna-Moreno Demonstration Area
MFP	Management Framework Plan
N-AMP	Non-Allotment Management Plan Areas
NWPS	National Wilderness Preservation System
ORV	Off-Road Vehicle
PER-EPH	Perennial-Ephemeral
RAMP	Recreation Activity Management Plan
RUD	Recreation Use Days
TDS	Total Dissolved Solids
UI	Unimplemented Allotment Management Plan
URA	Unit Resource Analysis
USFS	United States Forest Service

VRM	Visual Resource Management
WMP	Wilderness Management Plan
WSA	Wilderness Study Area

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Glossary

GLOSSARY

ACTIVE USE: Grazing privledges which have been paid for and are presently being used. Active use combined with non-use equals total livestock preferences.

ADJUSTMENT IN (LIVESTOCK) NUMBERS: An increase or decrease in livestock numbers to conform to the amount of forage produced in the area in relation to other uses of the area.

ADJUSTMENT IN (LIVESTOCK) SEASON OF USE: Adjusting the time of livestock grazing on a range area based on type of vegetation or state of vegetative growth.

ALLOTMENT: An area of land where one or more livestock operators graze their livestock. It generally consists of public lands but may include parcels of private or State owned lands. The number of livestock and season of use are stipulated.
An allotment may be divided intc several pastures.

ALLOTMENT MANAGEMENT PLAN (AMP): A detailed livestock management plan prepared for an allotment. It is designed to meet specific land use goals by specifying the intensity, duration and frequency of livestock use of public lands within the allotment.

ANIMAL UNIT MONTH (AUM): The amount of forage required to sustain the equivalent of one cow or five sheep for one month.

APPARENT TREND: Change in vegetation and soil characteristics resulting directly from environmental factor, primarily climate and grazing, as observed over a period of time.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC): Areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

ASSOCIATION (soil): A map unit in which two or more named components occur in each delineation in described proportion and pattern. The component soils can be located in the field by landscape features. The named components are individually large enough to be delineated at a 1:20,000 scale.

AUTHORIZED LIVESTOCK USE: The maximum amount of livestock use which could be licensed or permitted.

BACKGROUND: The area of visual zone which lies beyond the foreground-middleground, usually from a minimum of 3-5 miles to a maximum of about 15 miles. Atmospheric conditions in some areas may limit the maximum to about 8 miles or extend it beyond 15 miles.

CAMPSITES: Areas of permanent habitation (villages), and temporary camps. Tend to be located near water near utilized resources.

CARRYING CAPACITY: The maximum amount of grazing use possible without inducing damage to vegetation or related resources. Carrying capacity may vary from year to year on the same area due to fluctuating forage production.

CERAMIC SCATTER: Broken ceramic sherds, either isolated or in quanity.

CHERRY STEM: Fingerlike intrusions into a WSA which are not themselves part of the WSA (for example, an access road).

CLASS II CULTURAL INVENTORY: A sample-oriented field inventory of cultural resources.

CLIMAX COMMUNITY: A biotic community which gain essentially permanent occupancy of a habitat and perpetuates itself there indefinitely unless disturbed by outside forces (from Daubenmire, *Plant Communities*, 1968, p. 25)

COLOR: The property of reflecting light of a particular wavelength that enables the eye to differentiate otherwise unidentifiable objects.

CONTIGUOUS: Lands or legal subdivisions having a common boundary; lands having only a common corner are not contiguous.

CONTRAST: The effect of a striking difference in the form, line, color, or texture of an area being viewed.

CONTRAST RATING: A method of determining the extent of visual impact of an existing or proposed activity which will modify any landscape feature.

COW-CALF OPERATION: A beef enterprise in which production is of calves and the calves are marketed within one year after birth.

CROSS-COUNTRY: Refers to travel that is not on existing access routes (ways and trails) and does not involve any surface disturbance other than that caused solely by the passage of vehicles.

CUMULATIVE IMPACT: The aggregate impact of existing and proposed activities. Individual intrusions when considered by themselves may not impair wilderness suitability; however, when combined with other existing and proposed substantially unnoticeable impacts, the total effect may be sufficient to impair an area's suitability for preservation as a wilderness.

DEFERRED ROTATION GRAZING: Systematic shifts in grazing within an allotment in succeeding years, allowing each part to rest successively in the growing season to permit seed production, seedling establishment, and improvement in plant vigor.

DISPERSED RECREATION USE: Recreation use that occurs outside developed recreation sites.

ENHANCEMENT: A short-term management alternative accomplished to increase visual variety where little or no variety exists at present.

EPHEMERAL RANGE: Range consisting primarily of annual plants which varies in production annually according to fluctuations of precipitation and temperature.

ETHNOGRAPHY: The anthropological description of living cultures.

FLPMA: The Federal Land Policy and Management Act of 1976 (Public Law 94-579, 90 Stat 2743, 43 USC 1701).

FOREGROUND-MIDDLEGROUND: The area visible from a travel route or use area to a distance of 3-5 miles. The outer boundary of this zone is defined as the point where texture and form of individual plants is no longer apparent in the landscape - vegetation is apparent only in patters or outline.

FORM: The mass of an object(s) that appears unified.

GRAZING SYSTEM: A systematic sequence of grazing use and non-use of an allotment to reach identified multiple use goals or objectives.

HABITAT TYPE: The collective area, occupied by one vegetative association, which is the product of all ecological factors (soil, climate, topography, etc.) which produce it.

IMPACT: The effect, influence, alteration, or imprint of an activity.

IMPAIR: To diminish in value or excellence.

INTERMITTENT STREAM: A stream that does not flow yearround but is periodically dry.

INTRUSION: A feature (land, vegetation, or structure) which is generally considered out of context with the characteristic landscape.

LANDSCAPE CHARACTER: The arrangement of a particular landscape as formed by the variety and intensity of the basic elements of form, line, color, and texture.

LINE: A point which has been extended; anything arranged in a row or sequence.

LITHIC: Pertaining to stone.

LITHIC SCATTER: The occurrence of flaked stone tools and flakes, from isolates to a large, dense scatter. Generally workshop areas, sometimes associated with quarries.

LITTER: Surface layer of loose organic debris consisting of freshly fallen or slightly decomposed organic materials.

LIVESTOCK DISTRIBUTION: The uniformity of livestock grazing use over a range area. It is affected by availability of water, by topography, and by type and palatability of vegetative species.

LIVESTOCK FORAGE POTENTIAL: Total yearly vegetative production (for forage species) grown on a given site as the site approaches a vegetative climax or near climax condition.

LIVESTOCK GRAZING LICENSE: An authorization which permits the grazing of a specified number and class of livestock on a designated area of BLM district grazing lands for a period of time, not to exceed one year.

LIVESTOCK OPERATION: The management of an area of land so that a significant portion of the income is derived from the continuing production of livestock.

LIVESTOCK OPERATOR: One who qualifies to graze livestock on public lands.

MANAGEMENT FRAMEWORK PLAN(MFP): Land use plan for public lands that provides a set of goals, objectives, and constraints for a specific planning unit to guide the development of detailed plans for the management of each resource. The planning process is divided into three steps. Specialists prepare management recommendations for their respective resources in step one. The manager, through a conflict resolution process, develops a proposed plan from the recommendations in step two. The final decision to adopt a plan is made in step three.

MILLING SITES: Isolated or groups of mortars or metals, bedrock or portable used to process some types of plants.

MITIGATION: Measures taken to minimize or eliminate adverse impacts. They consititue a real and committed action by the Bureau of Land Management.

MULTIPLE USE: "... the management of the public lands and their various resource values so that they are utilized in the cominbation that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to proivde sufficient latitude for periodic adjustemnts in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into accoun the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit ouput." (From section 103, FLPMA).

OFF-ROAD VEHICLE (ORV): Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

PASTURE: A Subdivision of a grazing allotment on public lands.

PERENNIAL RANGE: Range with a predominance of plants with a life cycle of three or more years.

PLANT COMMUNITY: The collective area, occupied by one or more vegetation association, which is the product of all ecological factors (soil, climate, topography, etc.) which produce it.

PREFERENCE: The maximum amount of livestock use which could be licensed or permitted.

PRIMITIVE AND UNCONFINED RECREATION: Nonmotorized and nondeveloped types of outdoor recreational activities.

RANGE CONDITION: Relative position of a range with regard to an attainable standard determined by resource managers on the basis of site potentials. Condition is determined by interpreting the ability of vegetation (quality and quantity) to provide sustained livestock forage and soil stability.

RANGE FACILITY: A structure, such as reservoirs, fences, etc., that facilitates livestock grazing on public lands.

RIPARIAN: Situated on or pertaining to the bank of a stream or other body of water. Used to refer to the plants of all types that grow along streams, around springs, etc.

ROADLESS AREA: 1. A BLM administered area bounded by a road using the edge of the physical change that creates the road or the adjacent edge of the right-of-way, other ownership, or water, as a boundry. 2. A formally designated State of California administered area that is equivalent to federal wilderness study areas.

ROASTING PITS: Rock-lined pits, where plants (mainly agave) were processed.

ROCKSHELTERS: Small rock overhangs, caves usually found in mountainous areas; may contain perishables.

ROCKART/ROCK ALIGNMENTS: Rock art including pictographs and petrogrlyphs, stove circles and rock walls.

SCENIC QUALITY: The quality of the secnery as determined through the use of the scenic evaluation process.

SEASON-LONG GRAZING: Yearlong grazing without rest periods.

SEASON OF USE: The time of livestock grazing on a range allotment based on a type of vegetation or stage of vegetative growth.

SOLITUDE: 1. The state of being alone or remote from habitations; isolation. 2. A lonely, unfrequented, or secluded place.

STAND: A plant community representative of a particular association.

STOCKING RATE: The degree to which a grazing unit is stocked with livestock, usually expressed in AUMs. The stocking rate may be more or less than the carrying capacity of the grazing unit.

SUBSTANTIALLY UNNOTICEABLE: Refers to something that either is so insignificant as to be only a very minor feature of the overall area or is not distinctly recognizable by the average visitor as being manmade or man-caused because of age, weathering, or biological change. An example of the first would be a few minor dams or abandoned mine buildings that are widely scattered over a large area, so that they are an inconspicuous part of the scene. Serious intrusions of this kind, or many of them, may preclude inclusion of the land in a wilderness study area. (See also "Cumulative Impact", above.) An example of the second would be an old juniper control project that has grown up to a natural appearance, the old fallen trees largely decomposed.

TEXTURE: The visual result of the tactile surface characterisitcs of an object.

THERMOLUMINESCENCE: A dating technique which allows anything which has been altered by heat to be assigned a relative date. That date indicates the time the item was last subjected to heat (i.e., it is useful in identifying when pottery was manufactured).

UNNECESSARY OR UNDUE DEGRADATION: Impacts greater than those that would normally be expected from an activity being accomplished in compliance with current standards and regulations and based on sound practices, including use of the best reasonably available technology.

VEGETATION ZONE: The entire area over which one vegetative association is climatic climax.

VISUAL RESOURCE MANAGEMENT (VRM): The planning, design, and implementation of visual resource management classes for all BLM resource management activities.

VISUAL RESOURCE MANAGEMENT (VRM) CLASSES: The degree of alternation that is acceptable with the characteristic landscape. The classes are based upon the physical and sociological characteristics of any given homogeneous area.

VISUAL SENSITIVITY LEVEL: An index of the relative importance of value of visual response to an area in relation to other areas.

WATERSHED: The area drained by a principal river or stream system.

WILDERNESS AREA: 1. An area formally designated by Congress as part of the National Wilderness Preservation System. 2. An area formally designated as part of the State of California's Wilderness Preservation System.

WILDERNESS INVENTORY: An evaluation of the public lands in the form of a written description and map showing those lands that meet the wilderness criteria as established under section 603(a) of FLPMA and section 2(c) of the Wilderness Act, which will be referred to as wilderness study areas (WSA's). See *Wilderness Inventory Handbook,* dated September 27, 1978.

WILDERNESS NON-SUITABILITY: A management recommendation, based on the application of wilderness suitability criteria, that the best use of the resources comprising a Wilderness Study Area would be met without designation of the WSA as a component of the National Wilderness Preservation System, permitting uses which might not necessarily be comparible with wilderness values.

WILDERNESS REPORTING: The process of preparing the report on each wilderness study area and submitting that report to the President and Congress through the Department of the Interior.

WILDERNESS REVIEW PROGRAM: The term used to cover the entire process of wilderness inventory, study, and reporting for the wilderness resource, culminating in recommendations submitted through the Secretary of the Interior and the President to Congress as to the suitability or non-suitability of each wilderness study area for inclusion in the National Wilderness Preservation System.

WILDERNESS STUDY: The process of analysing and planning wilderness preservation opportunities along with other resource opportunities within the Bureau's Planning System.

WILDERNESS SUITABILITY: A management recommendation, based on the application of wilderness suitability criteria, that the best use of the resources comprising a Wilderness Study Area would be designation of the WSA as a component of the National Wilderness Preservation System.

REFERENCES CITED

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Archaeological Systems Management, Inc. 1980. Cultural Resources Inventory of the McCain Valley Study Area, San Diego County, California (Draft). U.S. Dept. of Interior, Bureau of Land Management.

Brown, David E. 1978. Grazing, Grassland, Cover and Game Birds. 43rd North American Wildlife and Natural Resources Conference. Phoenix, Arizona, March 18-22, 1978.

Bentley, Joy R. 1967. Conversion of Chaparral to Grassland U.S. Forest Serv. Pacific S.W. Forest and Range Exp. Sta. Handbook No. 328, 35pg.

Brady, N.C. 1974. The Natures and Properties of Soils. 8th ed. New York: MacMillian.

Cable, Dwight R. 1975. Range Management in The Chaparral Type and Its Ecological Basis. U.S. Dept. Agric., For. Serv., Rocky Mt. For. and Range Exp. Stn. Research Paper RM-155, Fort Collins Colo.

Camel, Erick. Personal Communication, January, 1980. BLM, Safford, Ariz.

Case, C.P. 1966. "Grazing and Watershed Value of Native Arizona Plants." Native Plants and Animals as Resources in dried lands of the Southwestern United States. Am. Assoc. Adv. Sci., Rocky Mt. Southwest. Div. (Comm. Desert Ariz. Zones Res., Fagstaff, Ariz., May 1965) Contrib. 8,9,. 31-40.

Cheatham, Norden H., Haller, J. Robert. 1975. An Annotated List of California Habitat Types. University of California Natural Land and Water Reserve System. Unpublished.

County of San Diego. 1976. General Plan.

Cunningham, S.C. 1979. The ecology of Peninsular desert bighorn sheep (Ovis canadensis cremnobates), Carrizo Canyon, California. Bureau of Land Management Report. 93pp.

Fages, Pedro. 1937. A Historical, Political and Natural Description of California (1775) translated by Herbert Inagram Priestly, University of Calif. Press, Berkeley.

Furlow, Bob, Kofa Game Range, U.S. Fish and Wildlife Service, Yuma, Arizona, personal communication, January, 1980.

Gifford, E.W. 1931. The Kamia of Imperial Valley Bureau of American Ethnology No. 97, Smithsonian Institution, Washington D.C.

Hansen, C.G. and O.V. Deming. 1973. Reproduction. "The desert bighorn, its life history, ecology and Management." Desert Bighorn Council. Chapter 9 Prelinimary manuscript.

Hendee, John C. U.S. Forest Service, personal communication, 1972.

Hendee, John C., Robert C. Lucas, & George H. Stankee, (eds). 1970. Wilderness Management. U.S. Forest Service, Misc. Publication #1365.

Hicks, Lorin L. 1978. The status and distribution of Peninsular bighorn sheep in the In-Ko-Pah Mountains. California Bureau of Land Management Report. 63 pp.

Hormay, August L. Principles of Rest - Rotation Grazing and Multiple-Use Land Management. U.S. Dept. of Agric., Forest Service, Sept., 1970.

Humphrey, R.R. Journal of the American Society of Agronomy Vol. 32, No. 10, October 1940.

Johnson, R.Roy, and Jones, Dale A. 1977. Importance of Preservation and Management of Riparian Habitat, A Symposium. U.S. Forest Service General Technical Report RM-43 216 pp.

Kroeber, A.L. 1925. Handbook of California Indians. Bureau of American Ethnology No. 78, Smithsonian Institution Washington D.C.

Light, J.T., Jr. 1969. Letter in files of U.S. Forest Service, San Diego, California. 2610 Cooperative Relations. 2 pp.

Light, J.T., Jr. and R. Weaver. 1973. Report on bighorn sheep habitat study in the area for which an application was made to expand the Mt. Baldy winter sports facility. Cajon Ranger District, San Bernardino National Forest, U.S. Forest Service. 39 pp. (mimeo).

Lord, Phil, personal communication, 1979.

McCain, R., personal communication, 1978.

McCain, J.L., personal communication, June 1, 1977.

McKee and Wolf. 1963. Water Quality Criteria. California State Water Resources Control Board, Publication 3-A reprint June 1, 1974.

McKinnie, Harold, CDFG personal communication, December, 1979.

Munz, Phillip A., Keck, David D. 1970. A California Flora. University of California Press.

Native American Heritage Commission, Memorandum on Indian Heritage Consultants and Observers Monitors, letter of correspondence, July 17, 1979.

Roney, J. 1977. Livestock and Lithics: The Effects of Trampling. Winnemucca, Nevada: U.S. Dept. of Interior, Bureau of Land Management.

Ruch, James, personal communication, 1979.

Schoenfeld, Clarence A. and John C. Hendee. 1978. Wildlife Management in Wilderness. Boxwood Press, Pacific Grove CA. pp 172.

Science Applications Inc. 1979. Draft Report on baseline Meteorology and Air Quality in the Riverside District.

Skovlin, J.M., P.J. Edgerton, and R.W. Harris. 1968. The influence of cattle management on deer and elk. Trans. N. Amer. Wildl. and Nat. Resour. Conf. 33: 169-181.

Shdpek, Florence C. 1968. The Autobiography of Delfina Cuero. Dawsons Book Shop, Los Angeles.

State of California. 1975. California Ground Water. California Department of Water Resources, Bulletin No. 118.

---. 1976. California City and Unincorporated Place Names, Department of Transportation, Sacramento, CA.

---. 1979. California Statistical Abstract, Department of Finance.

---. 1979. Population Estimates for California Counties Population Research Unit, Sacramento, CA.

State of California, Department of Fish and Game. 1978. At the Crossroads: A Report on California's Endangered and Rare Fish and Wildlife. State of California, Resources Agency.

Stelfox, John. 1976. Range ecology of Rocky Mountain Bighorn Sheep. Canadian Wildlife Service. Report Series Number 39.

Stoddard, Lawrence A., Smith, Arthur D. 1955. Range Management., Second edition New York: McGraw-Hill Book Co.

Turner, J.C. 1973. Water, energy, and electrolyte balance in the desert bighorn Sheep, Ovis canadensis. Ph.D. Dissertation, Univ. of California, Riverside. 114 pp.

U.S. Congress. 1979. Designating certain National Forest System Lands in the National Wilderness Preservation System, by resource and for other purposes. House of Representatives Report Number 96-617.

U.S. Department of Agriculture. 1967. Agriculture Handbook No. 328.

U.S. Department of Agriculture, Economics, Statistics, and Cooperative Service. 1978. California Livestock Statistics.

U.S. Department of Agriculture, Soil Conservation Service and U.S. Forest Service. 1973. Soil Survey San Diego County.

---. 1978. County of San Diego Agricultural Crop Report.

U.S. Department of the Interior, Bureau of Land Management. 1979. Eastern San Diego County Planning Area Analysis. Unpublished report. BLM, Riverside, CA., District Office.

---. 1979. California Desert Conservation Area Wilderness Inventory Final Descriptive Narrative.

---. 1979. Final Intensive Inventory, Public Lands Administered by BLM outside the California Desert Conservation Area.

---. 1979. McCain Valley Resource Conservation Area Recreation Activity Management Plan. BLM, Riverside, Ca., District Office.

---. 1980. Rangeland programmatic Memorandum of Agreement with the Advisory Council on Historic Places. BLM Instruction Memorandum No. 80-369.

U.S. Department of the Interior, U.S. Geological Survey. 1977. Water Data Report CA-77-1.

Weaver, R.A., J.L. Mensch and W.V. Fait. 1968. A survey of the California desert bighorn in San Diego County. Calif. Dept. Fish and Game. PR Project W-51-R-13B. 23 pp.

Wilson, L.O. 1969. "The forgotten desert bighorn habitat requirement." Trans. Desert Bighorn Council. 13: 108-113.

---. BLM Boise, Idaho, personal communication, January, 1980.

Wirth Associates, Inc. 1978. Overview of the Prehistory and History on Inland. San Diego County. U.S. Dept. of Interior, Bureau of Land Management.

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Appendices

APPENDIX A

Section 1

TABLE A-1

ACRES/VEGETATION TYPE BY ALLOTMENT EASTERN SAN DIEGO COUNTY EIS AREA

Allotment	Vegetation Type	Code	Acres	Percent of Total by Allotment
San Felipe	Chamise	051	935	73
	Other Desert Shrub	164	350	27
Total Acres			1,285	100
Cigarette Hills	Chamise	051	120	100
Total Acres			120	100
Julian	Chamise	051	40	100
Total Acres			40	100
Banner Queen	Chamise	051	2,005	48
	Other Chaparral	055	1,723	42
Ponderosa Pine	Ponderosa	062	6	1
	Oak	102	244	6
	Cottonwood	103	124	3
	Other Desert Shrub	164	21	1
Total Acres			4,123	100
Oriflamme	Mid-Grass (Bunch)	012	800	12
	Chamise	051	3,560	51
	Other Chaparral	055	1,482	21
	Oak	102	21	1
	Creosote Bush	111	186	3
	Mesquite	121	27	1
	Other Desert Shrub	164	837	12
Total Acres			6,913	100
Vallecito	Chamise	051	315	2
	Other Chaparral	055	1,429	9
	Other Mountain Shrub	059	530	3
	Juniper	092	891	6
	Creosote Bush	111	684	4
	Mesquite	121	70	1
	Other Desert Shrub	164	9,820	65
	Snakeweed	171	1,474	10
Total Acres			15,213	100
Canebrake	Chamise	051	950	11
	Other Chaparral	055	734	8
	Mountain Mahogany	056	514	6

	Juniper	092	228	3
	Desert Saltbush	136	315	4
	Other Desert Shrub	164	6,095	68
Total Acres			8,836	100
In-Ko-Pah	Big Sagebush	041	80	1
	Other Chaparral	055	4,955	30
	Mountain Mahogany	056	248	2
	Other Mountain Shrub	059	3,241	20
	Oak	102	29	1
	Mesquite	121	22	1
	Desert	136	393	2
	Other Desert Shrub	164	7,316	45
Total Acres			16,283	100
McCain Valley	Other Mountain Shrub	059	360	100
Total Acres			360	100
Mt. Tule	Chamise	051	62	1
	Other Chaparral	055	1,950	41
	Other Mountain Shrub	059	2,679	58
	Mesquite	121	19	1
Total Acres			4,710	100
Tierra Blanca	Chamise	051	2,268	14
	Other Chaparral	055	6,940	44
	Mountain Mahogany	056	1,543	10
	Other Mountain Shrub	059	3,669	23
	Juniper	092	279	2
	Oak	102	167	1
	Other Broadleaf	104	46	1
	Other Desert Shrub	164	378	2
	Other Annual Grass	182	518	3
Total Acres			15,808	100

APPENDIX A
Section 2

TABLE A-2

MAJOR PLANT SPECIES OF THE EASTERN SAN DIEGO COUNTY EIS AREA VEGETATION TYPES

Vegetation Type (acres)	Code	Common Name	Botanical Name
Mid Grass (800)	012	Pubescent Wheatgrass	*Agropyron trichophorum*
		Sugarbush (Sumac)	*Rhus ovata*
		Desert Scrub Oak	*Quercus turbinella*
		Mexican Manzanita	*Arctostaphylos pungens*
Big Sagebrush (100)	041	Great Basin Sagebrush	*Artemisia tridentata*
		Wright's Buckwheat	*Eriogonum wrightii*
		California Buckwheat	*Eriogonum fasciculatum*
		Broom Snakeweed	*Gutierrezia sarothrae*

Chamis	051	Chamise	Adenostoma fasciculatum
(20,126)		Cupleaf Ceanothus	Ceanothus greggii
		California Buckwheat	Eriogonum fasciculatum
		California Scrub Oak	Quercus dumosa
Other Chaparral	055	California Buckwheat	Eriogonum fasciculatum
(22960)		Sugarbush (Sumac)	Rhus ovata
		Desert Apricot	Prunus fremontii
		Mormon Tea	Ephedra californica
		California Juniper	Juniperus californica
Mountain Mahogany	056	Mountain Mahogany	Cercocarpus betuloides
		California Buckwheat	Eriogonum fasciculatum
		Silver Cholla	Opuntia echinocarpa
		California Scrub Oak	Quercus dumosa
Other Mountain Shrub	059	Cupleaf Ceanothus	Ceanothus greggii
(13145)		Redshank	Adenostoma sparsifolium
		Chamise	Adenostoma fasciculatum
		California Scrub Oak	Quercus dumosa
Ponderosa Pine	062	Ponderosa Pine	Pinus ponderosa
(528)		Big Cone Spruce	Psuedotsuga macrocapa
Juniper	092	California Juniper	Juniperus californicus
(3690)		California buckwheat	Eriogonum fasciculatum
		Desert Apricot	Prunus fremontii
		Parry Abrojo	Condaliopsis parryi
Oak	102	Coastal Live Oak	Quercus agrifolia
(527)		Interior Live Oak	Quercus wislizenii
		California Scrub Oak	Quercus dumosa
		Mexican Mazanita	Arctostaphylos pungens
Cottonwood	103	Fremont Cottonwood	Populus fremontii
(124)		Western Sycamore	Platanus racemosa
		Arroyo Willow	Salix laevigata
		Spiny Rush	Juncus acutus
Other Broadleaf Trees	104	California Bay	Umbellularia californica
(46)		Interior Live Oak	Quercus wislizenii
		Sugarbush (Sumac)	Rhus ovata
		Broom baccharis	Baccharis sergiloides
Creosote bush	111	Creosote bush	Larrea tridentata
(870)		Brittlebush	Encelia farinosa
		Silver Cholla	Opuntia echinocarpa
		Ratany	Krameria grayi
Mesquite	121	Honey Mesquite	Prosopis glandulosa
(138)		Screwbean Mesquite	Prosopis pubescens
		Tamarisk	Tamarix ramosissima
Desert Saltbush	136	Allscale	Atriplex polycarpa
(708)		Cheesebush	Hymenoclea salsola
		Silver Cholla	Opuntia echinocarpa
		Burrobush	Ambrosia dumosa
Other Desert Shrub	164	Brittlebush	Encelia farinosa
(30843)		Burrobush	Ambrosia dumosa
		Desert Agave	Agave deserti
		Silver Cholla	Opuntia echinocarpa
		Cresote Bush	Larrea tridentata
Snakeweed	171	Broom Snakeweed	Gutierrezia sarothrae
		California Buckwheat	Eriogonum fasciculatum
		Engelmann Prickly Peat	Opuntia phaeacantha
		Catclaw	Acacia greggii

Other Annual Forbs (518)	182	Red Stem Filaree Clover Red Brome Schismus	*Erodium cicutarium* *Trifolium* spp. *Bromus rubens* *Schismus barbatus*

APPENDIX A

Section 3

Vegetation Survey

The Eastern San Diego County EIS Area (BLM land only) was surveyed using the Multistage Inventory Technique (Example 3). However, the information (composition, density and species lists) that was supposed to come from computer output, as described in Example 3, was never finalized on a computer readout, because errors in the computer program could not be corrected in time to meet deadlines. As a result the carrying capacities were determined in the format of the ocular reconnaissance range survey method. However, this should not be misconstrued as indicating that ocular reconnaissance inventory data was used. All data came from the Multistage Inventory Technique described below.

The field data from the Multistage Inventory Technique field write up sheets (Example 1) was transferred to the ocular reconnaissance range survey write up sheets (Example 2) where composition and density were manually calculated. Proper Use Factors (PUFs) and Forage Acre Requirements (FARs) were added to compute the carrying capacities.

Proper Use Factors used in the EIS area were originally established in 1965, for the 1965 McCain Valley Range Survey. However, these PUFs were modified, in a meeting of State, District and Resource Area Range Specialists in 1979, based on field observations of grazing habits and dietary studies (Bighorn Sheep Fecal Analysis Study, 1978 and 1979, by BLM El Centro Area Office). The PUF table is available for review in the El Centro Resource Area Office.

Observations were made during range inventories on each allotment concerning utilization levels of key plant species. This data was used in equating current range condition and trend as well as for predicted future condition. It was observed that utilization in some key areas approached 100%. Thus it was necessary to reduce utilization levels resulting in a reduction of livestock use. In the establishment of proper use factors described above, a standard utilization level of 50% of current years growth for all the alternatives was adhered to. This use level, along with the proposed grazing systems, will provide for plant requirements (i.e., storing of food reserves) thus providing for plant vigor and reproduction.

Forage Acre Requirements (FAR) were established in the 1965 Range Survey. Again, these were modified based on field observations and professional judgment (verbal communication with Tim Reuwsaat-BLM Riverside District and Hyrum Johnson-BLM Desert Planning Staff).

The In-Ko-Pah allotment was used to determine the FAR to be used in determining carrying capacity. This allotment was selected because it was representative of the vegetative types and topography found throughout most of the area and because of the overall fair range condition. The mountainous portions include mountain shrubs, other chaparral and oak vegetation types. The lower portions (desert areas) include desert saltbush and other desert shrub vegetation types.

During the field inventories, apparent use was determined to be light in all areas of this allotment. Because of the known stocking rate (verbal communication with lessee) of .98 cows per section-yearlong for the last seven years and the apparent light use) it was determined that the proper overall stocking rate could be approximately 2 cows per section yearlong. This would be 600 AUMs of use or an overall FAR of .56. From this, an FAR of .6 was applied to the mountainous areas where forage production is higher in perennial grasses and shrubs and a FAR of .5 was applied to the desert areas where forage production, in the form of perennial grasses and shrubs is lower. The lower FAR in the desert compensates for the emphemeral vegetation (Humphrey 1940) that is generally more voluminous than the mountainous areas, and the FAR of .6 for the mountains was increased from .56 because of the lower amounts of emphemeral vegetation generally available during the year.

The calculations for determining the FAR are given below:

1. Allotment acres = 16283 ac 640 ac/section = 25.4 sections (Federal Range only).

2. Average use has been 25 cows. 25 cows 25 section = 98 cows/section - yearlong.

3. Estimated proper stocking rate = 2 cows/section - yearlong.

4. Two cows/section yearlong x 25 sections = 50 cows yearlong or 600 AUMs.

5. 341.87 Forage acres 600 AUMs = .56 FAR.

Table A-3 presents forage acres by vegetative type.

TABLE A-3

COMPUTING FORAGE ACRES (FA)

Veg. Type	Suitable Acres	Forage Acre Factor	FA
1	350.77	.027	9.47
56	1141.59	.030	20.83
6	157.03	.016	2.51
8	131.03	.031	4.06
86	1107.7	.032	35.44
9	87.26	.0059	.51
11	392.69	.059	19.28

13	336.2	.045	15.33
14	3195.47	.026	83.08
23	2581.36	.045	116.16
26	28.99	.0026	.07
27	65.93	.024	1.58
28	13.57	.014	.19
30	239.52	.037	8.86
31	659.90	.019	12.53
39	15.25	.0495	.76
43	22.18	.0819	1.81
48	20.0	.0292	.58
49	173.57	.052	9.02
		Total	341.87

Livestock Forage Allocation

Before field sampling began, homogeneous vegetation units were identified on aerial photographs. Field data was collected within these units. When field data collection was completed the units were further refined and delineated on 7-1/2 minute quadrangles and classified. From these maps acreages were determined for each type. These acreages were broken down even further by distance to water. Within each vegetation type, acreage further than four miles from water was determined. Acreages were then categorized as suitable (within four miles of water), potentially suitable (could be suitable with water development) and unsuitable. Suitable acres also included vegetation types producing at 32 acres/AUM or better and less than 50% slope. Potentially suitable acres included acreages less than 50% slope that are producing at 32 acres/AUM or better but fall beyond four miles from water. Unsuitable acres included acreage in a vegetation type that were greater than 50% slope and are producing at greater than 32 acres/AUM.

Livestock AUMs were computed on the range forage survey sheets. The acreages of suitable and potentially suitable lands were divided by the acres/AUM, shown on the forage survey write up sheets forage vegetation type, to determined carrying capacities for each type. Carrying capacities do not include unsuitable acres.

For example, the carrying capacity in the In-Ko-Pah allotment was determined in the following manner. The capacity of each plant community was determined separately. For mixed chaparral, the proper use factor (.1384) was multiplied by the average density (33.1%) to obtain the forage acre factor (.045). This was then multiplied by 100%, the percent utilization, to obtain the net forage acre factor (.045). This was then multiplied by the forage acre requirement (see pages A-5 and A-6) to obtain the communities present production in acres per AUM (13). Total capacity was obtained by dividing this figure into the number of suitable acres. This process was repeated for all plant communities which were then summed to obtain the total carrying capacity for the allotment.

Future carrying capacity was determined by projecting the condition of each plant community within each allotment under every alternative.

Production in acres per AUM was then determined by comparing the projected forage condition to production under present condition and at livestock forage potential. This can be illustrated using the previous example from the In-Ko-Pah allotment. Mixed chaparral is presently in fair condition, producing at a rate of 13 acres per AUM. The production at livestock forage potential, representing range in excellent condition, would be three acres per AUM. Under alternative 3, this community is projected to be in good condition by 2001. Therefore, a value of eight acres per AUM was used to calculate total production and carrying capacity.

From these calculations, forage allocations in the suitable vegetation types were recommended. Allocation of forage to wildlife, in some instances, resulted in a reduction of proposed livestock allocations.

Example 1--continued

DATE:
LOCATION:
TRANSECT NO:
SWA:
ELEVATION:
LOCATION DESCRIPTION:
NAME OF DATA COLLECTOR:

SPECIES	QUADRAT NUMBER				
	1	2	3	4	5

Comments:

BUREAU OF LAND MANAGEMENT
STANDARD UNIT RECORD
FOR SITE CONTROL DATA
STEP-POINT DATA, SPECIES LIST
AND
ION CONDITION CLASSIFICATION-SSF

RECORD TYPE	V	1
STATE		
DISTRICT		
PLANNING UNIT		
SITE NO.		
TRANSECT NO.		
ACTION (A-ADD, D-DELETE C-CHANGE)		

Example 1

SECTION I - SITE CONTROL DATA

DATE			RECORDER	VEGETATION SUB-TYPE	SLOPE %	ELEVATION	ASPECT	TRANSECT LENGTH	TRANSECT ACRES
R	MO	DAY							

PLOT SIZE		AZIMUTH	SOIL NUMBER	AERIAL PHOTO IDENTIFICATION	
WT. EST.	CHARACTER.			FLIGHT LINE NO.	ORTHOPHOTO NAME
☐ .96 ☐ 4.8 ☐ 1.92 ☐ 9.6	☐ .01 ☐ .02				

COMPARISON AREA IDENTIFICATION					Pct. of SITE	TRANSECT NUMBERS FOR THIS PERCENT
State	Dist.	Twp.	Range	Consec. No.		

SECTION II - SPECIES LIST

BorP	Symbol	Common Name

SECTION III - SSF

ITEM	PLOT NUMBER 1	2	3	4	5	6	7	8	9	10
Soil Movement										
Surface Litter										
Surface Rock										
Pedestalling										
Flow Patterns										
Rills										
Gullies										
TOTAL										
AVERAGE SSF										

SECTION IV - STEP-POINT DATA (200 POINTS)

ver

POINT

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

ENTRIES: Litter - (P-Persistent, N-Nonpersistent), B-(Bare Ground, No Canopy)
-(Bare Ground, Canopy), G-(Gravel), C-Cobble), S-(Stone), R-(Bedrock), ARTR2-(Species)

APR 18 1980

Example 1--continued

BUREAU OF LAND MANAGEMENT
STANDARD UNIT RECORD
FOR
GREEN WEIGHT CONVERSION
FACTOR DATA

RECORD TYPE Y 6
STATE C A
DISTRICT 0 6
PLANNING UNIT
RANGE SITE
ELEVATION
DATE YR 78 MO DAY

COLLECTOR

Perennial Species	Brown-Blanquet Cover-Abundance#	Vigor Rating	Density	Width (cm)	Height	Annual Species

APR 1 8 1980

Form 4412-1
(November 1970)

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Writeup No. Example 2

Date

Aerial Photo No.

FORAGE SURVEY TYPE WRITEUP
(OCULAR RECONNAISSANCE METHOD)

Examiner	KIND OF GRAZING ANIMAL *	SEASON OF USE	SECTIONS	TWP.	RGE.	MER.
Type						
Ac./AUM						

	SPECIES	TOTAL ALLOWABLE PUF	% COMPOSITION	CATTLE PUF	COMP. X C PUF	SHEEP PUF	COMP. X S PUF	DEER PUF	COMP X D PUF	PUF	COMP. X ___ PUF
GRASSES											
	SUBTOTAL										
FORBS											
	SUBTOTAL										
SHRUBS											
	SUBTOTAL										
	TOTALS		100								

Av C PUF _____ × Av Den _____ = FAF _____ × _____ % Util = Net FAF _____ ; FAR _____ ÷ Net FAF _____ = _____ Ac/AUM

Av S PUF _____ × Av Den _____ = FAF _____ × _____ % Util = Net FAF _____ ; FAR _____ ÷ Net FAF _____ = _____ Ac/AUM

Av D PUF _____ × Av Den _____ = FAF _____ × _____ % Util = Net FAF _____ ; FAR _____ ÷ Net FAF _____ = _____ Ac/AUM

Av PUF _____ × Av Den _____ = FAF _____ × _____ % Util = Net FAF _____ ; FAR _____ ÷ Net FAF _____ = _____ Ac/AUM

Total Net FAF _____ ; FAR _____ ÷ Net FAF _____ = _____ Ac/AUM

---

* Livestock and major game species. *(Other game species making unappreciable use are:*

Example 3

MULTISTAGE INVENTORY TECHNIQUE
CASE STUDY - McCAIN VALLEY

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ABSTRACT

This presentation deals with an inventory approach for sampling 94,000 acres of wildland in eastern San Diego County. The data was collected for general land-use planning with special emphasis on the needs of grazing livestock and wildlife.

Two different levels (stages) of color I.R. photography were used for stratification: 1975, 1:30,000 for broad delineations and 1978, 1:12,000 for delineations of homogeneous vegetation units. These units were then quantitatively and qualitatively sampled on the ground. Line intercepts, quadrats and ocular abundance estimates were used to determine cover, density and frequency of the vegetation. Data was compiled and analyzed with the aid of a computer. From this data a vegetation map was developed, and management decisions were made to allocate forage for grazing livestock and to determine wildlife habitat.

INTRODUCTION

Study Area

The Bureau of Land Management (BLM) is a multiple-use agency administering approximately 450 million acres in the western United States. In southern California the Bureau is trustee of 9-1/2 million acres of Public Lands. Although most of this land is in the California Desert, about 250,000 acres are in eastern San Diego County. These San Diego wildlands are subject to a wide variety of uses, one of which is cattle grazing.

In early 1978 an inventory was planned to sample vegetation parameters for general land use planning, with special emphasis on grazing and wildlife management. The area to be inventoried was 94,000 acres in eastern San Diego County and is called the Eastern San Diego County (ESDC) planning unit. Much of the ESDC planning unit is scattered among the Forest Service lands, private, and state lands. The planning unit is a large ecotonal area, bordered on the eastern flank by the Colorado Desert and on the west by the coniferous forest of the Laguna Mountains. This creates a wide diversity of plant communities within the planning unit. A strong east-west latitudinal gradient creates a very high relief pattern and a unique microclimatic situation. This gradient complicates the pattern of plant communities found within McCain Valley. This pattern is further complicated by a north-south precipitation gradient. Along the xeric southern limits of the planning unit a sparse, open vegetation pattern can be found, while the more mesic northern areas contain a very dense pattern. Thus, because of the ecotonal situation between two major biomes, strong east-west topographic gradient, and north-south precipitation gradient the planning unit contains a very complex vegetation pattern on the landscape. This mosaic has also been modified by fire, flood, drought and 125 years of grazing pressure.

Eastern San Diego County is not only diverse from a vegetative standpoint, but is also subject to an assortment of public uses. These sometimes conflicting uses have created many management problems.

The planning unit is only 90 miles from the San Diego metropolis and provides a wide array of recreational opportunities. Over 30,000 visitor-use days per year occur in the area and include such uses as camping, hunting, sightseeing and off-road vehicle use. The planning unit has a long history of use by domestic livestock and provides feed for about 5000 AUMs per year. The eastern escarpment of the area supports a declining herd of peninsular bighorn sheep. Several studies on population dynamics and diet regimes have been completed, and an array of management alternatives have been identified.

From the foregoing we see that the planning unit sustains a variety of public uses, provides valuable wildlife habitat, has several management problems and contains a complex vegetation pattern on the landscape. Any inventory method developed for ESDC must take into account the diversity of uses, biological variability, and the needs of land managers to make intelligent land-use decisions.

Problem Definition

In 1977, Eastern San Diego County was identified as an area where a grazing Environmental Impact Statement would be required by 1980. At the same time other data needs were identified for wildlife management and general land-use planning. In January 1978, a pre-inventory planning meeting was held at the BLM Riverside District Office to discuss these data needs. The range staffs, wildlife staffs and management developed criteria and data requirements for each discipline, along with a project time table, and list of key inventory team members. The problem at hand was how to inventory an extremely diverse area to meet the detailed needs of our range and wildlife staffs, and also provide a broad format of information for our planning staff. This task was further complicated by the fact the inventory had to be completed in one field season and within tight budget constraints.

Data Output

As a result of the pre-inventory meeting, data needs were identified and methods of accomplishment were developed. Data needs were grouped into two classes: (1) overlays and maps and (2) data tables.

I. Overlays and Maps	Method of Accomplishment
1. Vegetation	Aerial photos and field work.

2. Rare, Endangered and Threatened plant populations (a) known population sites (b) potential population sites	Literature and field work.
3. Water sources (a) standing water (b) intermittent streams	Aerial photos and field work.
II. Data Tables	
1. Type floristic list by vegetation type	Field work.
2. Relative density, cover and frequency by species	Aerial photos and field work.
3. Vigor rating by species	Field work
4. Soil surface factors by vegetation type	Field work
5. Average species width and height	Field work
6. Importance values by species	Calculated from above data.

METHODOLOGY

Aerial Photography

The use of aerial photography was identified as one tool to aid the inventory process. Because of the expected plant diversity and complex vegetation patterns two levels of stratification were used to aid field sampling. Initial stratifications were made with high flight photography at a scale of 1:30,000. These 1975 color I.R. prints provided the identification of broad physionomic vegetation patterns, and were used by the field crews for site and bearing location on the ground. Further stratifications were made on newly acquired 1978, color I.R. positive transparencies, at a scale of 1:12,000. This photography served three main functions: (1) It permitted identification of homogeneous vegetation units. This allowed field crews to sample in pre-selected areas and reduce travel cost, and (2) It permitted development of a vegetation type map. The map criteria was based on a 40 acre minimum size mapping unit. However, biologically important resources (i.e. fan palms, oak groves, mesquite thickets) would be identified, even though all of these resources were often less than two acres in size, and (3) It permitted the identification and location of standing water. Large scale photography, 1:1000, was considered as a subsampling tool to increase sample size and reduce field cost. Unfortunately, our budget and tight timing schedule did not permit photo acquisition. As an experiment, we enlarged a selected frame of our 1:12000 photos, however, poor resolution prevented us from identifying plant species and taking measurements. We do feel if photographs of 1:500 or 1:750 are used species identification and measurement are possible in the vegetation types of McCain Valley.

Ground Data Collection

The photo interpreter directed the field crews to specific areas for sampling. The field crew leader determined whether or not an area was significantly different from previously sampled areas. If so, the new area was designated a Site Writeup Area (SWA) and given an identification number. Within each SWA the following procedures occurred: (1) A 30 meter tape was randomly laid out, (2) all perennial plant species that hit the tape at a meter interval were recorded and height and width measurements were taken, (3) at every sixth meter interval a 50 x 50 cm. quadrant was placed on the transect line. Each annual species rooted within the quadrant was listed and its percent cover was recorded, (4) plant density was determined by using 1/60 hectare plot. While the meter tape was on the ground a 5.56 meter rope was stretched over the tape and all perennial species counted while walking along the transect line. There was a minimum of seven transects, 15 quadrants and three density plots per SWA. In addition to these quantitative measurements, auxiliary qualitative data was also taken. These included plant vigor evaluations of grazing pressure on perennial species, and an ocular abundance rating for each species using the Bran-Blanquet system. Ocular abundance was used to augment quantitative data within SWAs and to provide some information in areas where transects were not possible (i.e. steep slopes). Within the McCain Valley Planning Unit, 51 SWAs were identified. Over 350 transects, 765 quadrants, 150 density plots and 415 ocular abundance estimates were recorded. This provided the data base for range allocation, vegetation classification and wildlife habitat determination.

Photo Interpretation and Mapping

Both stages of photography were used primarily as a stratification tool. This assisted in directing field crews to preselected areas and enable a vegetation map to be produced. Most of the photo work was done on th 1:12000 transparencies and was divided into two levels of intensity. The first level of stratification on the 1:12000 photographs was to direct field crews to sampling areas. Homogenous vegetation units were identified on the photos and the field crews would collect data within these units in the field. Each one of these units (SWAs) would have a number. When enough field information was gathered, the second level of stratification could begin. This second level was actually considered the mapping phase and was a refining process. Each SWA number was extrapolated into similar vegetation units on the photo and field crews provided ground truth in questionable cases. During this mapping process in intentional considerations were given to classification. Classifying the vegetation units would come later after the field data was analyzed. After all photos were stratified and numbered the delineations were transferred to a 1:24000, U.S.G.S. topographic map base.

DATA ANALYSIS

Data Tables

Field data was entered into a Data General computer, and four separate programs were developed to handle data outputs. All data was organized according to SWA number. Printouts by SWA contained species list, relative frequency, cover and density, and other plant data. These data were given to our range staff for determination of forage allocation for livestock. In addition to the above data, an importance value (I.V.) by species was calculated. The I.V. is commonly used in ecological studies and is the simple sum of the relative cover, density and frequency for a species. In those areas where SWA data was not available, the ocular abundance data was used. Once importance values were obtained and ocular abundance data gathered for all species a classification scheme could be developed.

Classification of Mapped Units

Any classification scheme for vegetation does not accurately portray what is really on the ground, but such a scheme can be a useful tool in man's interpretation of the landscape. Our classification scheme was based on our field data and not by a preconceived notion of what was on the ground. From the field data the three highest importance values (species) were calculated by SWA. These three species represented a plant association and were the floristic building blocks of the classification system. In areas where no SWA data was available the ocular abundance data was used. The SWA and ocular abundance data provided 175 plant associations over the whole planning unit. Similar associations were grouped into larger units called series. There were 34 series level units, which was the level of map detail needed by our range staff. To meet the requirements of our wildlife staff we lumped the 34 series types into 11 wildlife habitat types. For planning purposes we used six vegetation types. Thus, from our field data we were able to generate three maps at different levels of detail, which were meaningful to all three user groups.

Appendix B

SENSITIVE PLANT INVENTORY METHODS AND SENSITIVITY LEVELS DEFINED

The public lands in the EIS area were searched for rare and endangered plants from March through September 1979. Due to manpower, time, flowering times, terrain and weather limitations, not all of the EIS area was surveyed well. Searches were prioritized and concentrated in areas which were thought likely to be most affected by grazing, as determined by the Resource Area Range Conservationist and Area Manager The San Ysidro, San Felipe, Julian, and Oriflamme planning subunits were searched at most one day with a very small area of coverage. The other planning subunits were searched fairly well, although very steep areas were not surveyed except by binoculars, and only the area near McCain Valley Road and Interstate 8 were searched during autumn blooming periods.

Literature and botanical experts in the area were consulted prior to the field surveys and 65 plants were looked for as potentially occurring on public lands and listed by the California Native Plant Society. For the field surveys, ratings of Rarity, Endangerment, Vigor, and Distribution (R-E-V-D codes) were unpublished revised southern California CNPS codes of 1978. In February 1980, CNPS is to publish a revision of the list of Rare and Endangered Vascular Plants of California, and the ratings now used to form the groupings of sensitivity levels in Tables A-B are the 1980 CNPS ratings. BLM Riverside District office has developed a listing of sensitivity levels based on the CNPS R-E-V-D codes. This is merely a description in words which helps managers to quickly understand what the CNPS codes mean.

An explanation of the CNPS R-E-V-D codes and the BLM Sensitivity Levels follows:

1. CNPS R-E-V-D Codes Explained
   From Powell, W. Robert (ed.) Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society, Special Publication No. 1, 1974, page 54.

Rarity (R)

1. Rare, of limited distribution, but distributed widely enough that potential for extinction or extirpation is apparently low at present.

2. Occurrence confined to several populations or one extended population.

3. Occurs in such small numbers that it is seldom reported; or occurs in one or very few highly restricted populations.

P.E. Possibly extinct or extirpated.

Endangerment (E)

1. Not endangered.
2. Endangered in part.
3. Totally endangered.

Vigor (V)

1. Stable or increasing.
2. Declining.
3. Approaching extinction or extirpation.

General Distribution (D)

1. Not rare outside California.
2. Rare outside California.
3. Endemic to California.

2. BLM Sensitivity Levels Explained by CNPS R-E-V-D Code

Critically Sensitive:

3-3-3-3
3-3-2-3
3-2-2-3
3-2-2-2
3-3-3-2
3-3-2-2
3-2-3-3
3-2-3-2
3-3-1-3
3-3-1-2
3-2-1-3
3-2-1-2
3-1-1-3
3-1-1-2
3-1-3-3
3-1-2-3
2-3-2-2
2-3-1-2

Highly Sensitive:

2-2-2-3
2-2-2-2
2-2-1-3
2-2-1-2
1-3-2-3
1-3-2-2

Moderately Sensitive:

2-1-2-3
2-1-2-2
2-1-1-3
2-1-1-2
1-2-2-3
1-2-2-2
1-2-1-3
1-2-1-2

Limited Distribution: (CNPS List 2)

1-1-2-3
1-1-2-2
1-1-1-3
1-1-1-2

Plants Not Rare Outside California (CNPS List 3)

Level A:

3-3-2-1
3-3-1-1
3-2-2-1
3-2-1-1
3-1-1-1
2-3-2-1
2-2-2-1
2-1-2-1
2-2-1-1
2-1-1-1
1-3-2-1
1-3-1-1
1-2-2-1

Level B:

1-2-1-1
1-1-2-1
1-1-1-1

To understand the groupings, one should refer to the definitions of the R-E-V-D code numbers above.

3. Plants of Special Management Concern

Those plants in the "Critically, Highly, and Moderately Sensitive" categories are considered "Plants of Special Management Concern." These plants must receive "special consideration" in the planning process, which includes maintaining or enhancing the ecosystems occupied by those plants, as required in BLM Instruction Memos No. 79-64, No. CA-77-256, and No. CA-79-136, Change 1.

These plants present the greatest constraints for managers. In the "Critically and Highly Sensitive" categories, all impacts may have to be avoided.

4. Plants of Lesser Management Concern

Those plants in the "Limited Distribution" and "Plants Not Rare Outside California" categories are considered "Plants of Lesser Management Concern." These plants basically fall into List 2 and 3 of the 1980 CNPS Inventory. More discretion for allowing impacts to these plants is afforded to BLM management than in the categories above. Impacts may generally be allowed if mitigation is not feasible.

A word of caution is in order. The more impacts are allowed to these plants, the more endangered the plant becomes. Sensitivity levels change over time based upon the present conditions of the plant's populations. With more impacts to the plant, it may be rated much higher in sensitivity in the future. Thus, present lack of management concern may severely limit management options in the future.

In addition, those plants "Not Rare Outside California" may be listed as rare, threatened, or endangered within California or the United States by the state or Federal governments, respectively, even though they are not rare in Arizona or Mexico.

Prudent management would consider each of these plants on a case-by-case basis, and make every attempt to adequately mitigate impacts. Of those plants "Not Rare Outside California," those in "Level A" are of greatest concern since they would be of special concern if they were rare outside the state. Management in Mexico especially may change the status of these plants quickly.

5. Former Plants of Concern Determined by CNPS 1980 Not to be Rare

In its revision of 1980, CNPS used new data which showed that some plants previously thought to be rare actually were not rare at all. In some cases, taxonomic problems were responsible. These plants fall into List 4 of the 1980 CNPS Inventory.

Plants in this category are not of management concern at this time, but due to the dynamic nature of plants and man's impacts on them, they may become of concern in the future.

APPENDIX B

TABLE A

Plants Found or Confirmed in Study Area, 1978-79

Plants are listed by scientific name only by categories and CNPS codes as explained in Appendix A.

Plants of Special Management Concern

- Critically Sensitive
  - Lilium fairchildii 3-?-?-3
  - Limnanthes gracilis var. parishii 3-2-2-3 State-listed.
- Highly Sensitive
  - Astragalus douglasii var. perstrictus 2-2-1-2
  - Hemizonia floribunda 2-2-1-2
- Moderately Sensitive
  - Caulanthus simulans 2-1-1-3
  - Heuchera brevistaminea 2-1-1-3
  - Hulsea californica 2-1-1-3
  - Lupinus excubitus var medius 2-1-1-2
  - Opuntia bigelovii var. hoffmannii 2-1-1-3

Plants of Lesser Management Concern

- Limited Distribution
  - Delphinium parishii ssp. subglobosum 1-1-1-2
  - Diplacus aridus 1-1-1-2 (also called Mimulus aridus)
- Plants Not Rare Outside California
  - Ayenia compacta 2-1-1-1
  - Berberis higginsae 2-1-2-1
  - Bursera microphylla 2-1-2-1
  - Cassia covesii 2-1-1-1 (also called Senna covesii)
  - Geraea viscida 2-1-1-1
  - Ipomopsis tenuifolia 2-1-1-1
  - Linanthus bellus 2-1-1-1
  - Mentzelia hirsutissima var. stenophylla 2-1-1-1
  - Proboscidea althaeifolia 2-1-1-1
  - Gilia caruifolia 1-1-1-1
  - Lyrocarpa coulteri var. palmeri 1-1-1-1
  - Mirabilis tenuiloba 1-1-1-1
  - *Penstemon clevelandii ssp. connatus 1-1-1-1
  - Pholisma arenarium 1-1-1-1
  - Pinus quadrifolia 1-1-2-1

Note: *Field examiners were unable to differentiate between ssp. connatus and ssp. clevelandii in the field. A gradation of characteristics appears to exist between the subspecies, indicating possible taxonomic problems.

Former Plants of Concern Determined by CNPS 1980 Not to be Rare

- Acalypha californica
- Antirrhinum filipes
- Brickellia frutescens
- Collinsia concolor
- Dicentra chrysantha
- Eschscholtzia minutiflora
- Gilia australis
- Haplopappus propinquus
- Salvia vaseyi

APPENDIX B

TABLE B

Plants Possibly Occurring in Study Area, But Not Found or Confirmed 1978-79

Plants of Special Management Concern
- Critically Sensitive
  - *Berberis nevinii* 3-3-3-3
  - *Calochortus dunnii* 3-1-1-2 State-listed.
  - *Chaenactis parishii* 3-1-1-2
  - *Cupressus stephensonii* 3-3-2-3
  - *Euphorbia platysperma* 3-2-2-2
  - *Galium angustifolium* ssp. *borregoense* 3-2-2-3 State-Listed
  - *Lessingia glandulifera* var. *tomentosa* 3-1-1-3
  - *Machaeranthera lagunensis* 3-3-1-3 State-listed.
  - *Poa atropurpurea* 3-3-2-3

- Highly Sensitive
  - *Coryphantha vivipara* var. *alversonii* 2-2-2-3
  - *Delphinium hesperium* ssp. *cuyamacae* 2-2-1-3

- Moderately Sensitive
  - *Brodiaea orcuttii* 1-2-2-2
  - *Calamagrostis densa* 2-1-1-2
  - *Echinocereus engelmannii* var. *munzii* 2-1-1-2
  - *Grindelia hallii* 2-1-1-3
  - *Nasturtium gambelii* 1-2-2-2 (also called *Cardamine gambelii*).
  - *Streptanthus bernardinus* 2-1-1-3
  - *Xylorhiza orcuttii* 2-1-1-2

Plants of Lesser Management Concern
- Limited Distribution
  - *Psoralea ridida* 1-1-1-3

Plants Not Rare Outside California
  - *Euphorbia arizonica* 2-1-1-1
  - *Heuchera leptomeria* var. *peninsularis* 2-1-1-1
  - *Clarkia delicata* 1-1-1-1
  - *Haplopappus junceus* 1-1-1-1
  - *Salvia eremostachya* 1-1-1-1

Former Plants of Concern Determined by CNPS 1980 Not to be Rare
  - *Celtis reticulata*
  - *Crossosoma bigelovii*
  - *Lotus haydonii*
  - *Trichostema austromontanum* var. *austromontanum*

	Sensitive Plants by Area	1980 CNPS Taxon Code (1)	BLM Sensitivity Level (2)	Approx. No. of plants found in each atudy unit; No. of locations	Approx. Percentage of planta total population represented in study unit	Habitat in Study Unit	Grazing Impacta (3)	Comments on Plants (See Table ___ for Recommendations
1) San Ysidro Mts. (Not an allotment)	Lilium fairchildii	3-?-?-3	Critically Sensitive	12 one location	Maybe 100%	Riparian, canyon	Possible trampling and foraging	Only known recent location. No grazing currently projected for this area. This plant may be State and Federally listed as endangered. All impacts must be mitigated.
	Diplacus aridus (also known as Mimulus aridus) "Low Bush Monkey flower"	1-1-1-2	Limited Distribution	225 total two locations	1%	Usually steep, rocky slopes, among boulders	Very little, due to habitat	Both of these plants widespread in ES area. Of concern, but impacts can be allowed if mitigation not feasible. The more impacts allowed, however, the more endangered the plant becomes.
	Delphinium parishii ssp. subglobosum "Parish's Larkspur"	1-1-1-2	Limited Distribution	2 one location	< 1%	Stony, dry, moderate slopes	Unlikely; Larkspur often toxic to cattle.	
	See recommendations. Area not searched adequately. No grazing expected at this time.							Potential habitat for Hulsea californica.
2) San Felipe Hills (Not an allotment)	Delphinium parishii ssp. Subgloboaum "Parish's Larkspur"	1-1-1-2	Limited Distribution	1 one location	< 1%	Mild slope, near road	Unlikely; Larkspur often toxic to cattle.	See comments above for Larkspur.
	See recommendations. Area not aearched adequately. No grazing expected, however.							Potential habitat for Hulsea californica.
3) San Felipe Grazing Allotment	Less than 5% of allotment searched for plants; none found. See recommendations.							Further sensitive plant inventories required. Potential for Hulsea californica.
4) Cigarette Hills Grazing Allotment	No sensitive plant search at all. See recommendations.							Sensitive plant inventories required. Potential habitat for Hulsea californica.
5) Volcan Mt. (Not an allotment)	No sensitive plant search. at all. See recommendations.							No searches in this area, however, no grazing projected at this time. Sensitive plant inventory needed.
6) Banner Queen Grazing Allotment	Hulsea californica "San Diego Hulsea"	2-1-1-3	Moderately Sensitive	50-100 one location	Unknown	Fuel breaks, open places in chaparral	Not likely.	Only roads in Chariot and Rodriguez Canyons searched. See table ___, Management Concerns. Further inventories required.
	Delphirium parishii ssp. Subglobosum "Parish's Larkspur"	1-1-1-2	Limited Distribution	40 one location	< 1%	Oak grove in canyon next to road.	Unlikely; Larkspurs often toxic to cattle.	Widespread. See comments above for Hulsea.
	See recommendations. Inventories not adequate. Only roads searched.							Potential habitat exists for Lilium fairchildii.
7) Julian Allotment	No sensitive plant search at all. See recommendations.							Potential habitat exists for Hulsea californica.

8) Oriflamme Grazing Allotment	Delphinium parishii ssp. Subglobosum "Parish's Larkspur"	1-1-1-2	Limited Distribution	50-100 one location	< 1%	Rodriguez Canyon near road, gentle alope	Unlikely; Larkapurs often toxic to cattle	See comments for Larkspurs under San Ysidro Mta.
	See recommendations. Most of the area not adequately searched.							Potential habitat exists for Lilium fairchildii
9) 40 Acre Parcel (West of Oriflamme) (Not an allotment)	Limnanthes gracilis var. parishii "Cuyamaca Meadowfoam"	3-2-2-3	Critically Sensitive	No number estimate made	5-30%	Along stream in boggy areas	Part of population near Lake Cuyamaca heavily grazed. This population is in a steep area and is not grazed.	Known only from land within ES area around Lake Cuyamaca and Laguna Campground, state-listed as endangered, may be federally-listed soon. All impacts must me mitigated. No grazing projected for area.
	Heuchera brevistamineou "Laguna Alum root"	2-1-1-3	Moderately Sensitive	No number estimate made	Unknown	Along stream and on steep rock walls	This population is not grazed	Not expected to be impacted.
10) Vallecitos Grazing Allotment	Lupinus excubitus var. medius "Interior Bush Lupine"	2-1-1-2	Moderately Sensitive	200-300 nine locations	20-30%	Sandy alluvial fans at base of alopes; dry washes	Unlikely; probably not palatable, aome Lupinea toxic to cattle.	Populations should be monitored for impacta, wich should be mitigated.
	Opuntia bigelouii var. hoffmannii "Jumping Cholla"	2-1-1-3	Moderately Sensitive	800-1000 12 locations	30-60%	Steep slopes and alluvial fans	Probably very little; although cattle are known to eat some cacti	Known on BLM lands only in the western part of thia allotment. May be a hybrid, so not sensitive at all.
	Diplacus aridus (also known as Mimulus aridus) "Low Bush Monkey Flower"	1-1-1-2	Limited Diatribution	500 12 locations widespread	2%	Rocky, bouldery area; in or at base of slopes	Very little, due to habitat	Widespread in ES area. Of concern, but impacts can be allowed if mitigation not feasible. The more impacts allowed, however, the more endangered the plant becomes.
	Delphinium parishii ssp. subglobosum "Parish's Larkspur"	1-1-1-2	Limited Distribution	400 12 locations throughout	1%	Sandy or rocky slopes and fans throughout allotment	Unlikely; Larkspurs often toxic to cattle	
	Ayenia compacta	2-1-1-1	Not rare outside California	300 4 locations	Unknown	Rocky washes and slopes	Yes, heavily grazed, even in areas with no cattle (wildlife forage)	
	Cassia covesii "Cove's Cassia or Senna"	2-1-1-1	Not rare outside California	34 one location	Unknown	Gentle slope north of Vallecito Wash	Unknown	Only known in ES area from the part of this allotment north of Highway S-2.
	Proboscidea althaeifolia "Desert Unicorn Plant"	2-1-1-1	Not rare outside California	50 3 locations	< 1%	Sandy flats and washea	Appears unaffected	

	Sensitive Plants by Area	1980 CNPS Taxon Code (1)	BLM Sensitivity Level (2)	Approx. No. of plants found in each study unit; No. of locations	Approx. Percentage of plants total population represented in study unit	Habitat in Study Unit	Grazing Impacts (3)	Comments on Plants (See Table ___ for Recommendations
11) Non-Allotment Parcels Adjacent to Vallecitos	Lupinus excubitus var. medius "Interior Bush Lupine"	2-1-1-2	Moderately Sensitive	50 two locations	5%	Dry, sandy, gently-sloping washes	Unlikely	See comments for each species under Vallecitos Grazing Allotment.
	Diplacus Avidus (also known as Mimulus aridus) "Low Bush Monkey Flower)	1-1-1-2	Limited Distribution	9 one location	< 1%	Steep, rocky slope	Unlikely, due to habitat	
	See recommendations for these parcels. Most not adequately searched.							
12) Canebrake Allotment	Hulsea californica "San Diego Hulsea"	2-1-1-3	Moderately Sensitive	2 one location	Unknown	Open area in chapparal	Unlikely	Top of Thing Mt. only
	Lupinus excubitus var. medius "Interior Bush Lupine"	2-1-1-2	Moderately Sensitive	65 13 locations	5%	Dry washes	Unlikely	Both widespread in allotment. See comments under Vallicitos Grazing Allotment.
	Delphinium parishii ssp. subglobosum "Pariah's Larkspur"	1-1-1-2	Limited Distribution	300 14 locations	1%	Dry, stoney fans and slopes	Unlikely; Larkspur often toxic to cattle	
	Diplacus aridus (also known as Mimulus aridus) "Low Bush Monkey Flower"	1-1-1-2	Limited Distribution	100 6 locations	< 1%	Rocky, bouldery slopes	Unlikely due to habitat	Upper Canbrake near Pepperwood, and Upper Inner Pasture - See comments under Vallecitos Grazing Allotment.
	Ayenia compacta "Desert Ayenia"	2-1-1-1	Not rare outside California	16 3 locations	Unknown	Rocky canyons, base of rocky slopes	Unlikely; due to habitat	
	Geraea viscida "Sticky Sunflower"	2-1-1-1	Not rare outside California	1	< 1%	Open area in chapparal	Unknown	Top of Thing Mt. only.
	Mentzelia hirsutissima var. stenophylla "Hairy Stick-leaf"	2-1-1-1	Not rare outside California	1-50 occasional	Unknown	Rocky desert slopes	Probably not	Inner Pasture
	Proboscidea althaeifolia "Desert Unicorn Plant"	2-1-1-1	Not rare outside California	90 3 locations	< 1%	Sandy flats and washes	Appears unaffected	Canebrake to Inner Pasture

13) Non-Allotment Parcels adjacent to Canebrake Allotment	Diplocus aridus (also known as Mimulus aridus) "Low Bush Monkey Flower"	1-1-1-2	Limited Distribution	30 one location	< 1%	Rocky slopes in canyon	Unlikely, due to habitat	Parcel west of Canebrake. See comments for Vallecitos Grazing Allotment.
	See recommendations. Most of area not surveyed.							Potential habitat for several moderately sensitive plants occurs on the various parcels.
14) Tierra Blanca Allotment (McCain Valley Section only)	Astragalus douglasii var. perstrictus	2-2-1-2	Highly Sensitive	600 11 locations	15-30%	Stoney to sandy open areas in chapparal	Does not appear to be moderately affected. Some grazing may be beneficial since plant appears to respond favorably to disturbance.	Known only from BLM lands in McCain Valley, Lark Canyon, and Table Mt., adjacent Baja, CA
	Hulsea californica "San Diego Hulsea"	2-1-1-3	Moderately Sensitive	3 one location	Unknown	Open place in chapparal near stream	Unlikely	On Thing Mt. only in allotment. See comments for Lupine under Vallecitos Grazing Allotment.
	Delphinium parishii asp. subglobosum "Parish's Larkspur"	1-1-1-2	Limited Distribution	50 nine locations	< 1%	Dry, stoney fans and slopes	Unlikely; Larkspurs often toxic to cattle	Widespread, Thing Mt. as well as McCain Valley part of allotment.
	Gersea viscida "Sticky Sunflower"	2-1-1-1	Not rare outside California	125 3 locations	Unknown	Gentle to moderate sandy slopes	Unknown	Mostly northeast part of allotment.
	Linanthus bellus "Desert Beauty"	2-1-1-1	Not rare outside California	250 - 5 locations (Abundant when present, real #'s probably higher)	Unknown	Open areas in chapparal 3000-4500 feet	Probably little, due to ephemeral nature and location in bare spots in chapparal.	This plant occurs only in southeastern San Diego County and adjacent Baja, CA. Abundant when found in flower, but flowered only 3-4 weeks, then almost impossible to find. Previously thought to be much more rare and endangered.
	Pinus quadrifolia "Four-leaved Pinyon Pine"	1-1-2-1	Not rare outside California	1	Up to 10% of U.S. population	Rolling hills in mixed chapparal	Possibly eat seedlings	See recommendations. Most of the area used to be pinyon-juniper woodland 50 years ago.
15) In-Ko-Pah Allotment	Astragalus douglasii var. perstrictus	2-2-1-2	Highly Sensitive	(100?) 9 locations	5%	Stoney to sandy open areas in chapparal	Does not appear to be adversely affected. Plant responds to disturbance.	Numbers not recorded for several locations. Known only from BLM lands in McCain Valley, Lark Canyon, and Table Mt. Also some in adjacent Baja, CA.
	Hemizonia floribunda "Tecate Tarweed"	2-2-1-2	Highly Sensitive	900 4 locations	50-70%	Open disturbed areas, within chap. along intermittent stream features	Trampling danger. Probably not eaten.	Only populations on BLM land occur in this allotment and adjacen McCain Valley Allotment. Plant seems to colonize disturbed soils. Not previously known so far north. In SE part of allot., Lost Valley to Lark Canyon.
	Caulanthus sinuclans "Payson's Caulanthus"	2-1-1-3	Moderately Sensitive	Unknown	Unknown	Dry slopes, rocky places	Unknown	Colonizes disturbed areas, especially burned areas.
	Lupinus excubitus var. medius "Interior Bush Lupine"	2-1-1-2	Moderately Sensitive	65 8 locations	5%	Dry, sandy washes	Unlikely	

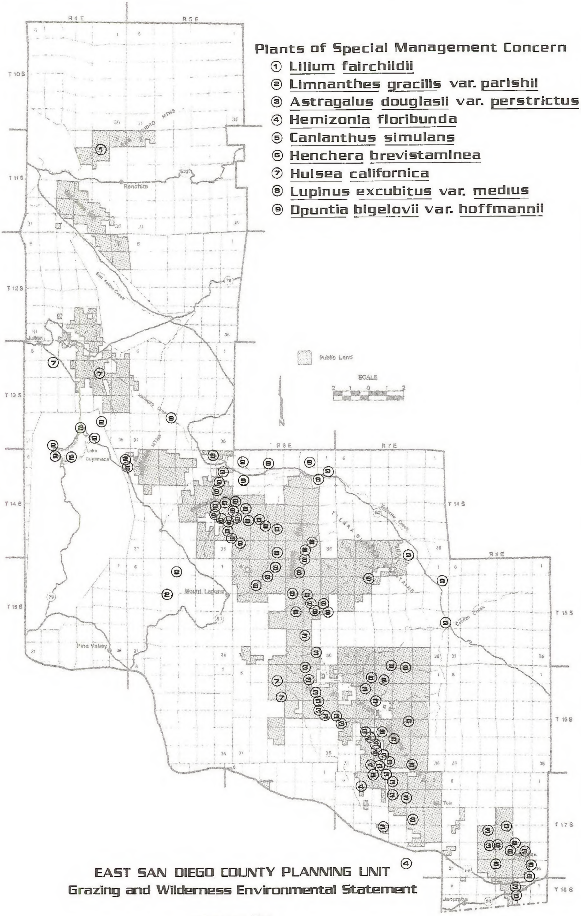
15 Continued	Delphinium parishii ssp. subglobosum "Parish's Larkspur"	1-1-1-2	Limited Distribution	50 7 locations	< 1%	Dry, stoney fans, slopes, washes	Unlikely; Larkspurs often toxic to cattle	Scattered
	Diplacus aridus (also known as Mimulus aridus)	1-1-1-2	Limited Distribution	40 one location	< 1%	Rocky slope	Unlikely, due to rocky habitat	
	Ayenia compacta "Desert Ayenia"	2-1-1-1	Not rare outside California	20 4 locations	Unknown	Rocky canyons	Unlikely, due to habitat	Rockhouse, Bow Willow Canyons
	Geraea viscida "Sticky Sunflower"	2-1-1-1	Not rare outside California	200 6 locations	Unknown	Gentle to moderate sandy slopes	Unknown	Western part of allotment
	Mentzella hirsutissima var. stenophylla	2-1-1-1	Not rare outside California	5 2 locations	Unknown	Steep, rocky slopes 900-2200 feet	Unlikely due to habitat. Some grazing is possible however.	Rockhouse Canyon. Most of its potential habitat along the escarpment was not searched.
	See recommendations. Most of steep eastern part of this allotment was not surveyed adequately for sensitive plants.							

16) Mount Tule Grazing Allotment	Astragalus douglasii var. perstrictus	2-2-1-2	Highly Sensitive	60 6 locations	3%	Sandy slopes	Does not appear to be grazed	Western part of allotment.
	Lupinus excubitus var. medius "Interior Bush Lupine"	2-1-1-2	Moderately Sensitive	60 2 locations	5%	Dry, sandy washes	Unlikely	Northern Canyon area only in this allotment. Much other potential habitat along desert escarpment not searched.
	Delphinium parishii ssp. subglobosum "Parish's Larkspur"	1-1-1-2	Limited Distribution	30 5 locations	< 1%	Gravelly, sandy moderate slopes	Unlikely; Larkspurs often toxic to cattle	Mostly single plants.
	Diplacus aridus 1 plant, Knoll east of road							
	Geraea viscida "Sticky Sunflower"	2-1-1-1	Not rare outside California	330 8 locations	Unknown	Along roads; gravelly, sandy, dry washes and slopes.	Probably not palatable	
	Linanthus bellus "Desert Beauty"	2-1-1-1	Not rare outside California	300 6 locations	Unknown	Dry slopes and flats, open places in chapparal	Probably little due to ephemeral nature & occurance in bare patches in chapparal	Occurs only in SE San Diego Co., & adjacent Baja, CA. Abundant when found in flower, but flowered only 3-4 weeks, then almost impossible to find. Previously thought to be more rare & endangered
	Pinus quadrifolia "Four-leaved Pinyon Pine"	1-1-2-1	Not rare outside California	5 4 locations	Up to 50% of U.S. population	Isolated locations, rolling hills in mixed chapparal, gentle slopes	Possibly eat seedlings	See recommendations. Most of the area used to be pinyon-juniper woodland 50 years ago.

17) Non-Allotment Lands at Mount Tule	Diplacus aridus (also known as Mimulus aridus) "Low Bush Monkey Flower)	1-1-1-2	Limited Distribution	10 2 locations	< 1%	Steep, rocky slope, dry wash	Unlikely, due to habitat	Widespread in ES area. See comments under Vallecitos Grazing Allotment.
	See recommendations. Most of this area was not searched.							Mirabilis tenuilaba occurs. Potential habitat for Berberis higginsas.
18) McCain Valley Grazing Allotment	Astragalus douglasii var. persfrictus	2-2-1-2	Highly Sensitive	100 one location	5-15%	Sandy slope	Does not appear to be grazed.	Many plants over a large area.
	Hemizonia floribunda "Tecate Tarweed"	2-2-1-2	Highly Sensitive	100 one location	5%	Sandy, dry wash; large area	Trampling danger. Probably not eaten as farweeds have strong odor.	Part on either side of fenceline between McCain and In-Ko-Pah grazing allotment, most in In-Ko-Pah. Listed in both allotments in this chart.
	Geraea viscida "Sticky Sunflower"	2-1-1-1	Not rare outside California	> 200 one location	Unknown	Large area, sandy slope	Unknown	Northeast corner of southern parcel.
	Pinus quadrifolia "Four-leaved Pinyon Pine"	1-1-2-1	Not rare outside California	2 one location	Up to 20% if U.S. population	Hill, sandy slope	Possibly eat seedlings	One small tree growing within the larger one. Southeast part of southern parcel.
	See recommendations. Only southern parcel & fenceline of northern parcel of allotment searched.							

19) Tierra Blanca Grazing Allotment (Table Mt. Section only)	*Astragalus douglasii* var. *perstrictus*	2-2-1-2	Highly Sensitive	Unknown 3 locations	Unknown	Sandy slopes, specific habitat not known.	Does not appear to be grazed	Western part of allotment.
	Lupinus excubitus var. *medius*	2-1-1-2	Moderately Sensitive	100 7 locations	5%	Dry, sandy washes, also near roads.	Unlikely	Northern Canyon area only in this allotment. Much other potential habitat along desert escarpment not searched.
	Delphinium parishii ssp. *subglobosum*	1-1-1-2	Limited Distribution	17 4 locations	< 1%	Sandy, rocky, dry washes and slopes.	Unlikely; Larkspurs often toxic to cattle	Mostly single plants.
	Diplacus aridus (also known as *Mimulus aridus*) "Low Bush Monkey Flower"	1-1-1-2	Limited Distribution	200 6 locations	2%	Rocky slopes	Probably not palatable	
	Berberis higginsae "Higgins' Barberry"	2-1-2-1	Not rare outside California	11 one location	10% of U.S. population	Narrow, rocky canyon	Probably little due to ephemeral nature & occurance in bare patches in chapparal	Occurs only in SE San Diego Co., & adjacent Baja, CA. Abundant when found in flower, but flowered only 3-4 weeks, then almost impossible to find. Previously thought to be more rare & endangered
	Ceraea viscida "Sticky Sunflower"	2-1-1-1	Not rare outside California	250 5 locations	Unknown	Sandy slopes, dry washes & alluvial fans - also near roads in areas of small rock piles.	Possibly eat seedlings	See recommendations. Most of the area used to be pinyon-juniper woodland 50 years ago.
	Ipomopsis tenuifolia "Scarlet Ipomopsis"	2-1-1-1	Not rare outside California	75 4 locations	40-70% of U.S. population	Sandy, dry washes and gentle to moderate slopes		

20) Jacumba Area (Not an Allotment)	Astragalus douglasii var. persfrictus	2-2-1-2	Highly Sensitive	Unknown number at one location	Unknown	Near dirt road	Unlikely; in areas where grazing occurs now, it does not appear to be grazed.	Found 1978, numbers not recorded. See comments under Tierra Blanca Allotment.
	Lupinus excubitus var. medius "Interior Bush Lupine"	2-1-1-2	Moderately Sensitive	10 one location	1%	Scattered along dry, sandy wash	Unlikely	See comments under Vallecitos Grazing Allotment
	Delphinium parishii ssp. subglobosum "Parish's Larkspur"	1-1-1-2	Limited Distribution	2 one location	< 1%	Rocky, sandy wash and adjacent slope	Unlikely; Larkspurs often toxic to cattle	
	Diplacus aridus (also known as Mimulus aridus) "Low Bush Monkey Flower"	1-1-1-2	Limited Distribution	200 Broad area	2%	Sandy pockets within boulders	None, cattle cannot get to these plants	



EAST SAN DIEGO COUNTY PLANNING UNIT
Grazing and Wilderness Environmental Statement

map no.B-1

APPENDIX C

WILDLIFE

Introduction

Wildlife habitat and condition impacts were analyzed in the following manner. Habitat and condition resource data were recorded using a variety of sources (prinicipally wildlife inventory reports the Unit Resource Analysis and special distribution and diet studies). Vegetative condition in major habitats types was recorded and placed on a matrix for each species which was addressed in the Management Framework Plan. In addition to vegetation, an attempt was made to summarize and highlight other key habitat related factors for each principal species for which vegetation was allocated. Adequacy of water sources, intrusions on habitat, vegetative manipulations, and required prescriptions for grazing use, total vegetative production, and cover were considered as indicators of overall habitat condition. This was displayed for each allotment according to key species and vegetative condition and related factors at present and as projected for the basic proposed action (alternative 3).

Once the basic comparison between existing condition for key habitats for key species and expected impacts of alternatives were identified, this information was aligned for comparison of impacts based on discrete action for each of the 5 alternatives for grazing managements. This data was arrayed on a separate matrix, Table A of this appendix to summarize major impacts to wildlife habitat under each alternative. This information establishes a reference for impacts on wildlife habitat under each alternative. This information establishes a reference for impacts on wildlife habitat conditions as they vary between alternative. Principle groups of wildlife species considered were Bighorn, Deer, and other wildlife (includes quail, raptors, small birds, small rodents, predators, reptiles, etc.).

IMPACTS TO WILDLIFE HABITAT
BY ALLOTMENT
BANNER QUEEN

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Condition and Trend, Suitability	N/A	N/A
2. Water Sources Adequate for Population?	N/A	N/A
3. Intrusions and Protective Measures ORVs, Range Developments, Range Systems, Prescribed Burns	N/A	N/A
DEER		
1. Vegetation Condition and Trend, Suitability	2006 acres of Chamise Chaparral (49% of allotment) and 1724 acres of mixed chaparral (forty-two percent of allotment) both poor with downward trend. Deer not common because fire suppression has resulted in very dense chaparral with little new growth. Riparian (Chariot Canyon) good condition, though threatened by mining. Highly suitable.	950 acres Chamise Chaparral to be burned, improving suitability of habitat, stimulating new growth. Condition on remaining chaparral habitat will not improve and may decline slightly.
2. Range Treatments and Burns and Facilities	N/A	950 acres to be burned (see above) and 7 miles of fences.
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 areas)	Chariot Canyon in good condition, but threatened by mining activities; it has suffered some adverse impacts.	Although no fencing proposed initially, canyon will be monitored to detect adverse impacts. General improvement in condition.
2. Production of Forage Cover	102 AUMs	500 AUMs by 200 due to burn.
3. Water Sources, Availability	N/A	No new water developments.

IMPACTS TO WILDLIFE HABITAT
BY ALLOTMENT
MT. TULE

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Condition and Trend, Suitability	Semi-desert Chaparral (1944 acres) in northeast portion of allotment in In-Ko-Pah mountains provides low to moderately suitable habitat in fair condition. 600 acres of highly suitable steep enriched desert scrub habitat occurs in extreme northeast.	Bighorn habitat will improve from fair to good condition. Limits on cattle season of use and ORV use to winter-spring will create highly suitable bighorn habitat by limiting intrusions to times of year when migrating lambs and ewes are elsewhere.
2. Water Sources Adequate for Population?	Water source as adequate.	No new sources proposed.
3. Intrusions and Protective Measures ORVs, Range Development, Range Systems, Prescribed Burns	Feral cattle conflict with bighorn in northeast part of allotment.	Feral cattle problems eliminated with their removal. ORV use during winter-spring only if Sacatone Spring and Mt. Tule roads will eliminate intrusions on Bighorn use (which is summer-fall). No prescribed burns. Elimination of cattle grazing from July 1 to October 31 will lessen livestock intrusions.
DEER		
1. Vegetation Condition and Trend, Suitability	1944 acres (forty-one percent of allotment) is covered with semi-desert Chaparral, low suitability deer habitat. 2685 acres (fifty-seven percent of allotment) is covered by mixed Chaparral, a habitat with low to moderate suitability. Both are in a stable fair condition.	Condition will improve from fair to good in semi-desert Chaparral habitat, while mixed Chaparral will remain in fair condition with a deteriorating trend. Deer suitability will be moderate to low in each area.
2. Range Treatments and Burns and Facilities		No burns. Three miles of fence across middle of allotment may impede movement.
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 acres)	No riparian areas.	No riparian areas.
2. Production of Forage Cover	308 AUMs	242 AUMs
3. Water Sources, Availability	Water sources are available but subject to vandalism.	4 new springs, 5 water troughs will enhance habitat suitability.

IMPACTS TO WILDLIFE HABITAT
BY ALLOTMENT
NEW ALLOTMENT B

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Condition and Trend, Suitability	Approximately 800 acres of semi-desert Chaparral in northeastern portion of allotment is moderately suitable bighorn habitat fair condition.	Bighorn sheep use, presently summer-fall, would not conflict with grazing use (winter-spring) Grazing management would slightly improve quality of desert Chaparral, removal of feral cattle in Carrizo Gorge and development of the water source would further enforce habitat.
2. Water Sources Adequate for Population	None in allotment at present; present seasonal population not dependent on water being in this area.	Water source to be developed for grazing will be utilized winter-spring only and could be used by bighorn when the sheep use the allotment in summer-fall.
3. Intrusions and Protective Measures ORVs, Range Development, Range Systems, Prescribed Burns	ORV intrusions have been curtailed. No range facilities or treatment at this time.	Aside from water source, no grazing-related facilities are planned.
DEER		
1. Vegetation Condition and Trend, Suitability	Approximately 1900 acres of semi-desert chaparral in fair conditon provides a habitat with low to moderate suitability for deer, although their presence has not been recorded.	Intensive grazing management will improve the condition of potential deer habitat in this area, although condition will remain fair.
2. Range Treatments and Burns, and Facilities	None existing.	None proposed.
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 Acres)	No riparian area.	No riparian area.
2. Production of Forage Cover	140 AUMs.	160 AUMs.
3. Water Sources, Availability	None at present.	Prior to implementation a water source would be developed. This will enhance wildlife habitat.

IMPACTS TO WILDLIFE HABITAT
BY ALLOTMENT
CANEBRAKE

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Condition and Trend, Suitability	Twenty-five percent of allotment covered by steep enriched desert scrub, excellent bighorn sheep habitat. Condition stable.	Desert scrub habitat will improve slightly as 4000 acres of allotment will be closed to livestock use on Sawtooth Mtn., the re-introduction zone. Suitability will be further enhanced by development of Inner Pasture water source. 38 AUMs to be allocated to Bighorn.
2. Water Sources Adequate for Population?	Inadequate water sources, water source necessary in Inner Pasture if reintroduction is to succeed.	One water source to be developed for bighorn in Inner Pasture.
3. Intrusions and Protective Measures ORVs, Range Development, Range Systems, Prescribed Burns	Boundary fence separates bighorn introduction from Inner Recreation visitation low.	Closed.
DEER		
1. Vegetation Condition and Trend, Suitability	Most deer habitat, the Chaparral habitat types (twenty-eight percent of the allotment) is in poor to slightly above poor condition and improving. Habitat is low to moderately suitable for deer. Remainder of allotment, mainly desert scrub, is not suitable for deer.	Burning will enhance 390 acres of deer habitat. Remaining habitat (2000 acres) will remain in poor condition and low to moderate suitability.
2. Range Treatments and Burns, and Facilities	Most existing fences are on allotment boundary.	Three springs, 1 mile water pipeline, 4 watertroughs, 1 well, 4 miles fence, 390 acres burned.
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 acres)	Portions of Pepperwood Canyon are in excellent shape, however, part is threatened by heavy cattle use.	Pepperwood Canyon will be in excellent condition. Fencing will end threat posed by livestock use.
2. Production of Forage Cover	333	414
3. Water Sources, Available		Extensive water developments (4 troughs, 1 well, 3 springs) will significantly enhance general wildlife habitat.

IMPACTS TO WILDLIFE HABITAT
BY ALLOTMENT
IN-KO-PAH

Description	Existing situation	Proposed Actions
BIGHORN		
1. Vegetation Condition and Trend, Suitability	Although overall habitat in fair to good condition, Bighorn population stable to good declining. Enriched desert scrub (6878 acres, forty-two percent of allotment) is high suitablity bighorn habitat, and is used primarily in the summer and fall.	Area to be designated ACEC. Fencing Roadhouse Canyon, termination of livestock grazing on 8000 acres of enriched desert scrub, removal of feral cattle from Carrizo Gorge, road closures will significantly enhance habitat.
2. Water Sources Adequate for Population?	Adequate water sources. Six developed waters, 7 primitive undeveloped waters. Past vandalism and lack of maintenance hence existing waters require rehabilitation.	Two water developements proposed on western edge of bighorn habitat.
3. Intrusions and Protective Measures ORVs, Range Development, Range Systems, Prescribed Burns	ORV use greatly reduced as access points on east side of McCain Valley road have been closed. ORV intrusions in northeast canyons, boundary fences only. No current range treatments. Feral cattle in Carrizo Gorge.	Cattle grazing will be eliminated from 8000 acres of habitat (most of it). Roads to Sombrero Peak, Bow Willow, Rockhouse Canyon to be closed. Feral cattle to be removed according to MFP-2.
DEER		
1. Vegetation Condition and Trend, Suitability	Deer not common in 8527 acres of potential Chaparral habitat in southwestern portion of unit (fifty-two percent of allotment) because fire surppression has resulted in dense chaparral with little new growth. Deer have probably left habitat near McCain Valley due to ORV use and harassment by shooters.	1800 acres to be burned. Improvement to moderate suitability due to burning Chaparral in southwest portion of allotment west side of McCain Valley. ORV intrusions curtailed east of McCain Valley. Chaparral condition will improve to good in burned acres, static in remainder.
2. Range Treatments and Burns, and Facilities	Only 1 pasture fence. Cuts off southwest portion of allotment. Rest boundary fences.	Adjustments being made in carrying capacity to reflect non-suitable areas for grazing. 1800 acres to be burned.

Description	Existing Situation	Proposed Action
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 acres)	Much of Bow Willow riparian woodland has been trampled by livestock.	0.5 miles of canyon will be fenced; livestock related impacts will be curtailed.
2. Production of Forage Cover	568 AUMs	860 AUMs
3. Water Sources, Availability	See water sources for bighorn.	See water sources for bighorn.

IMPACTS TO WILDLIFE HABITAT
BY ALLOTMENT
VALLECITO

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Condition and Trend, Suitability	Unit is ninety-five percent Bighorn Sheep range, primarily semi-desert Chaparrel, and enriched desert scrub. Approximately half is unsuitable for grazing. Southeast (next to Canebrake) and northwest (Sawtooth) suitable for reintroduction.	Bighorn reintroduction habitat in Sawtooth mountains and bordering Canebrake allotment is primarily upland enriched desert scrub, prime Bighorn habitat. Condition generally pristine.
2. Water Sources Adequate for Popualtion	Inadequate for reintroduction.	Water source will be developed in neighboring allotment (Canebrake).
3. Intrusions and Protective Measures ORVs, Range Developments, Range Systems, Prescribed Burns	Area overgrazed by cattle does not include bighorn reintroduction zones.	Cattle intrusions on Bighorn reintroduction areas would be limited as cattle use is confined to Potrero and Vallecito Valleys alluvial plains and lowlands, while sheep would graze only steep rocky slopes. No burns proposed or mechanical treatments proposed.
DEER		
1. Vegetation Condition and Trend, Suitability	Allotment in poor but slightly improving condition. Area "good for deer" according to hunters, especially in winter. Chaparral, which is in poor condition, is not widespread (sixteen percent of unit).	Improvements from "poor" to "fair" forage condition on 2494 acres (twenty percent of allotment). Some expansion of and deterioration of condition of chaparral.
2. Range Treatments and Burns, and Facilities	None present.	4 new miles of fence, mainly bounderies. No burns. No other facilities.
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 acres)	Storm Canyon habitat in good condition; road access only 1/2 way in.	N/A
2. Production of Forage cover	619 AUMs	717 AUMs
3. Water Sources, Availability	Numerous water sources. No problem with availability.	N/A

IMPACTS TO WILDLIFE HABITAT
BY ALLOTMENT
SAN FELIPE

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Conditon and Trend, Suitability	N/A	N/A
2. Water Sources Adequate for Population?	N/A	N/A
3. Intrusions and Protective Measures ORVs, Range Developments, Range Systems, Prescribed Burns	N/A	N/A
DEER		
1. Vegetation Condition and Trend, Suitability	The approximately 1300 acres of Chaparral which cover all of the allotment are very dense with little new growth. Few deer are found. Habitat suitability is low.	Little or no improvement is projected in the deer habitats allotment increase (560 acres) lands are generally in poor condition and likely will remain so, except for 123 acres of semi-desert chaparral which will improve to good.
2. Range Treatments and Burns and Facilities	No facilities presently exist.	Six miles of boundary fence may impede deer movements through north and east sides of allotment.
OTHER WILDLIFE		
1. Riparian Habitat Conditions (5 acres)	No riparian areas.	No riparan areas.
2. Production of Forage Cover	72 AUMs	102 AUMs
3. Water Sources, Availability	No existing water sources.	1 spring and 2 water troughs will enhance wildlife habitat.

IMPACT TO WILDLIFE HABITAT
BY ALLOTMENT
ORIFLAMME

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Condition and Trend, Suitability	N/A	N/A
2. Water Sources, Adequate for Population?	N/A	N/A
3. Intrusions and Protective Measures ORVs, Range Developments, Range Systems, Prescribed Burns	N/A	N/A
DEER		
1. Vegetation Condition and Trend, Suitability	Growth on approximately 1100 acres of Chamise and desert chaparral in the northwestern parcel of the allotment is very dense with little new growth. Habitat has low suitability and deer are not common. Approximately 3200 acres of Chamise Chaparral in remaining two parcels is in fair condition and offers habitat of low to moderate suitability.	Slight overall decline in quality of Chamise Chaparral. Static trend in quality of desert chaparral.
2. Range Treatments, Burns, and Facilities	800 acres of wheatgrass seeding exist, 400 in poor and 400 in good condition.	No prescribed burns. 400 acres of mechanical treatments. Only 3 miles of boundary fences to be constructed.
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 acres)	No riparian habitat.	No riparian habitat.
2. Production of Forage Cover	465 AUMs	720 AUMs
3. Water Sources, Availability	Water developed on wheatgrass seedings.	1 spring, 1 water trough will slightly enhance wildlife habitat.

IMPACT TO WILDLIFE HABITAT
BY ALLOTMENT
TIERRA BLANCA (McCAIN VALLEY PROPER)

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Condition and Trend, Suitability	Approximately thirty-seven percent of the area (3636 acres) are shown to be semi-desert Chaparral and only one percent (80 acres) of enriched desert scrub. The majority of the area is in poor to fair condition and static in trend. Increased moisture in the last three years has improved vegetation condition of the habitat along the eastern boundary of the allotment.	Enhanced treatment of primary forage areas outside principal sheep habitat and adjustment of livestock season of use should relieve some conflicts and improve conditions. Overall vegetation in these habitats are expected to improve slightly upward from poor to fair with potential for good condition in enriched desert scrub areas.
2. Water Sources Adequate for Population?	Bow Willow Spring and Pepperwood Spring provide principal water sources for sheep populations which utilize the desert scrub habitat directly above and to the east of the Carrizo Gorge area.	18 miles of fencing, 9 springs 1 mile pipeline, 1 well and 3 troughs are proposed in the allotment to provide additional water.
3. Intrusions and Protective Measures ORVs, Range Developments, Range Systems, Prescribed Burns	Unrestricted ORV use and increased human activity due to proximity to the State Park has been a problem in the Carrizo Gorge Canyon area. Some measures have been taken to reduce unauthorized recreation use. Some conflict has occurred between bighorn sheep and cattle at water sources.	Fencing springs, wells and water troughs proposed may help to check cattle distribution which should help protect bighorn water sources from cattle conflict. Unauthorized recreation use will be prevented by relinquishing access as proposed in MFP. Approximately 3767 acres are proposed for prescribed burning in the dense chaparral habitat to raise productivity of livestock forage far to the east of the sheep habitat. This may be helpful in keeping cattle concentrations away from key habitat and water.

Description	Existing Situation	Proposed Action
DEER		
1. Vegetation Condition and Trend, Suitability	Current vegetation is fair to poor in the predominant dense Chaparral. With twenty-three percent (2268 acres) of Chemise Chaparral and thirty-seven percent (3669 acres) of mixed Chaparral, overall habitat is fair for mule deer. Current density is about 3.8 square miles and have adequate forage allocation for the small density. Past conflicts with indiscriminant shooting, poaching, and increased ORV activity has caused decline in numbers.	With significant treatment due to burning impacts, condition should be extremely beneficial as discussed above since the majority of burning will take place on deer habitat.
2. Range Treatments and Burns and Facilities	There is ample water source for deer by private water sources and public sources coupled with riparian sources.	Increased water and protection of riparian woodlands would improve forage and water for deer. Significant removal of dense chaparral stands will provide overall habitat improvement. Reduction of ORV access and indiscriminant shooting will enhance habitat and facilities.
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 areas)	There are forty-six acres of riparian woodland habitat which are in fair to poor condition. Unauthorized vehicular damage and cattle use does occur in this habitat.	Projected condition is for gradual upward trend to fair and good condition. Riparian habitat has not been totally depleted and should recover with proposed ORV restriction and cattle removal from riparian zones through fencing and water pipelines.

	Description	Existing Situation	Proposed Action
2.	Production of Forage Cover	There are 167 acres of raptor nesting habitat available in the Oak groves habitat type. Harassment by public has occurred due to recreation use conflict.	Overall habitat production is projected to increase in Riparian areas and oak grove habitat due to protection and fencing. This should improve overall condition and improve vegetation, food, cover for species utilizing these areas.
3.	Water Sources, Availability	Water sources for other wildlife are adequate but sources are in poor condition due to vandalism and conflict with cattle use.	An additional 2 wells and 4 springs will be added.

IMPACT TO WILDLIFE HABITAT
BY ALLOTMENT
TIERRA BLANCA - TABLE MOUNTAIN

Description	Existing Situation	Proposed Action
BIGHORN		
1. Vegetation Condition and Trend, Suitability	N/A	N/A
2. Water Sources Adequate For Population?	N/A	N/A
3. Intrusions and Protective Measures ORVs, Range Development, Range Systems, Prescribed Burns	N/A	N/A
DEER		
1. Vegetation Condition and Trend, Suitability	N/A	N/A
2. Range Treatments and Burns and Facilities	N/A	N/A
OTHER WILDLIFE		
1. Riparian Habitat Condition (5 Areas)	The area comprises nine percent (600 acres) of good to excellent (red brome and wheatgrass) grassland habitat type and ninety percent (5100 acres) of semi-desert chaparral type in good to fair condition in upward trend.	The proposed action will continue an upward trend and good condition. Additional water facilities will enhance overall habitat.
2. Production of Forage Cover	This area serves good populations of quail and numbers have been high due to 3 good years of rainfall. The cliffs along higher elevations serve as excellent raptor habitat for nesting Golden Eagles and Prairie Falcons. The grassland serves as good food and cover for small mammals and birds.	Production is anticipated to be at a high level since current conditions are better than most other allotments a described under existing situation. Based on the extent of good to excellent conditions existing and the improvements in water planned, production will increase.
3. Water Sources, Availability	Currently there is adequate water supply available for existing livestock use, however, planned livestock use will require additional water supply.	Some increased use may be imposed in conjuntion with the McCain Valley section of the Tierra Blanca allotment.

Appendix D

Wilderness

Narrative describing WSAs in the ESDCPA. The Sawtooth Mountains contain three WSAs that are continguous but separated by roads. For clarity they are treated as a whole in the EIS.

CA-060-022, San Ysidro Mountain

I. Physical Boundaries

The Los Coyotes Indian Reservation and Anza-Borrego Desert State Park comprise the northern and eastern boundaries, respectively. Nonpublic lands form the south and east boundaries.

II. Land Ownership

Two patented mines are encompassed by the unit's 2,721 acres of public land, but the proposed 2,131-acre wilderness study area does not encompass either patented mine.

III. Description of Environment

The top of San Ysidro Mountain comprises the northern portion of the unit. The remaining area has a southern aspect and contains Bergstrom, Buck, and Cherry Canyons. The terrain is steep and is covered with pine at the summit, chaparral on the higher slopes, and desert scrub near the bottom.

IV. Natural Condition

In Bergstrom and Buck Canyons, a system of roads, mines, and buildings exists. Development is so extensive that this portion of the unit has been excluded as a potential wilderness study area. The northeastern part of the unit has been burned in the past and required tree plantings to encourage regeneration of the pine forest at the higher elevations. No other intrusions were seen in the unit.

V. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation

The unit is physically confining to the recreation user. However, when considered in combination with the state's Sheep Canyon potential wilderness area, the unit would be of sufficient size to provide outstanding opportunities for solitude or unconfined recreation. The unit's limited access, broken topography, and vegetation also contribute to these factors.

VI. Summary of Public Comments

Public comments differed. Specific mention was made to the roads, mines, and houses in Buck Canyon. Support was given to the area's hiking potential. Also voiced was that the unit could not meet wilderness criteria if its contiguity with Anza-Borrego Desert State Park was ignored. Support was given for wilderness designation even though a tree plantation is within the unit. Comments on future management concentrated on wildlife protection, maximum walking distance to the center of a future wilderness, providing public access to Cherry Canyon Road. Mineral resources are more important and should receive more consideration than wilderness.

Comments on resource allocation and management practices are study phase considerations. Developments in Buck and Bergstrom Canyons support their exclusion from the wilderness study area designation.

CA-060-023, San Felipe Hills

I. Physical Boundaries

The entire boundary is composed of nonpublic lands with the exception of two miles that are contiguous to Anza-Borrego Desert State Park on the east.

II. Land Ownership

The entire unit is composed of public lands. The proposed wilderness study area, which includes nearly the entire inventory unit, contains 5,265 acres, all of which are public lands.

III. Description of Environment

The unit consists of a 9-mile long ridge extending southeast to northwest. The steep-sided ridge is predominantly covered by dense chaparral, the lower areas by sparse desert scrub.

IV. Natural Condition

The naturalness of the unit has been somewhat impaired by the existence of trails; however, they are slowly disappearing. Some interior fencing can be seen within the unit. A powerline crosses along the northeastern boundary of the area and defines the edge of the proposed wilderness study area.

V. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation.

The dense vegetation and rugged topography provide excellent screening capabilities, enhancing opportunities for solitude and primitive and unconfined types of recreation.

VI. Summary of Public Comments

The public has expressed the following viewpoints. The unit should not become a wilderness area because valuable minerals and rare earths are believed to be located within the unit. The area should be open for rockhounders to use their vehicles in searching for rocks. Roads, radio towers, ranches and houses outside the unit, but near the boundary, should disqualify the unit from wilderness classification. Others believe that the area is in a natural condition and is contiguous with Anza-Borrego Desert State Park and should be classified as wilderness.

The comments have concurred with BLM's reports, referred to areas outside the unit or are wilderness study phase considerations. No new facts were mentioned.

CA-060-024A, Sawtooth Mountains A

I. Physical Boundaries

The unit is bounded on the north and northeast by nonpublic lands. Anza-Borrego Desert State Park borders on the west and the Cleveland National Forest on the south. Unit CA-060-024B borders on the east.

II. Land Ownership

The entire unit is composed of public land. The proposed wilderness study area, which includes all the intensive inventory unit except a small parcel in the northeast corner, contains a total of 3,892 acres.

III. Description of Environment

The dominating feature in the unit is an east-west ridge that rises above the Vallecito Valley to the north. The sides of the ridge are very steep and are covered with sparse desert scrub near the base to dense chaparral near the ridge top. Active grazing occurs in the lower elevations.

IV. Natural Condition

The area is in a natural state with almost no evidence of man's actions.

V. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation

The limited access and rugged topography provide outstanding opportunities for both solitude and primitive and unconfined recreation. Based on Forest Service review, a potential exists to include approximately 2,000 acres of the Cleveland National Forest with this intensive inventory unit and Unit CA-060-024B, for a combined total of nearly 30,000 acres of potential wilderness. This would further increase opportunities for solitude or primitive and unconfined recreation.

VI. Summary of Public Comments

The public has expressed the following varied viewpoints. The area ls permeated with roads. Because the unit borders on Indian reservations and Anza-Borrego Desert State Park, the criteria for wilderness are not met. They expressed a belief that the protection of bighorn sheep is the reason for considering the unit as a wilderness area, but the bighorn sheep are not affected by man and do not need the protection of a wilderness area. The use of beehives, water troughs, and fences on public lands disqualify an area for wilderness designation. Some questioned the BLM's designation of the route to Inner Pasture as a road. Discrepancies between the Draft Initial Inventory map and the July 1979 map were noted.

Statements on land treatment and management are study phase considerations. The route to Inner Pasture is maintained and regularly used to provide access to private property and an airfield. Corrections are being made to maps as cartographic errors are detected.

CA-060-024B, Sawtooth Mountains B

I. Physical Boundaries

The Cuyapipe Indian Reservation and the Cleveland National Forest comprise the west boundary of the unit. The north and southeast boundaries are comprised of nonpublic lands. The east boundary is Anza-Borrego Desert State Park and the Manzanita Indian Reservation forms the south boundary.

II. Land Ownership

The 31,006 acres of public land encompass 38 acres of private ownership. The proposed wilderness study area contains 24,696 acres of BLM administered land.

III. Description of Environment

The topography of the unit varies from flat valley bottom to steep rugged mountainsides. The higher elevations support a dense chaparral vegetation; the lower valley areas and lower ridges are covered with sparse desert scrub. Active grazing occurs throughout the lower portion of the unit.

IV. Natural Condition

The central portion of this unit, which includes the proposed wilderness study area, is in a natural condition with few impacts of man. Roads extend into the unit, but are not substantially noticeable. Pipelines and numerous trails impact the naturalness of the extreme northern end of the unit. The southern one-third of the area contains White Arrow and Cottonwood Campgrounds associated with the McCain Valley Recreation Area.

Intensive off-road vehicle use occurs around these sites, creating numerous trails. An east-west fence and rugged topography effectively eliminate the spread of these off-road vehicle trails into the remaining area of the unit to the north. Two airfields at the eastern end of Canebrake Wash were excluded from the proposed wilderness study area.

V. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation

Within the proposed wilderness study area, some areas of dense vegetation, rugged topography, and limited access provide outstanding opportunities for solitude. In the southern area, intensive off-road vehicle use and numerous associated trails adversely impact opportunities for solitude and limit primitive recreation experiences.

VI. Summary of Public Comments

The public has expressed the following varied viewpoints. The area is permeated with roads. Because the unit borders on Indian reservations and Anza-Borrego Desert State Park, the criteria for wilderness are not met. They expressed a belief that the protection of bighorn sheep is the reason for considering the unit as a wilderness area, but the bighorn sheep are not affected by man and do not need the protection of a wilderness area. The use of beehives, water troughs, and fences on public lands disqualify an area for wilderness designation. Some questioned the BLM's designation of the route to Inner Pasture as a road. Discrepancles between the Draft Initial Inventory map and the July 1979 map were noted.

Statements on land treatment and management are study phase considerations. The route to Inner Pasture is maintained and regularly used to provide access to private property and an airfield. Corrections are being made to maps as cartographic errors are detected.

CA-060-024C, Sawtooth Mountains C

I. Physical Boundaries

Nonpublic lands and Canebrake Wash Road constitute the northwest boundary of the unit. The remaining boundaries are defined by Anza-Borrego Desert State Park.

II. Land Ownership

This unit of public land does not encompass any private land. The proposed wilderness study area amounts to 2,509 acres.

III. Description of Environment

The unit is a steep, northwest-facing slope overlooking Canebrake Wash. The area is sparsely covered with desert scrub and exposed rock.

IV. Natural Condition

With the exception of a small portion of an airfield which extends a short distance into the northernmost portion of the unit, the area is not impacted by man due to limited access and rugged steep topography.

V. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation

Standing on its own, this unit is too small and confined to provide outstanding opportunities for solitude or primitive recreation. However, the unit is contiguous to the proposed Sombrero Peak State Wilderness Area, and when viewed collectively, provides outstanding opportunities for both solitude and primitive and unconfined recreation due to rugged topography and limited access.

VI. Summary of Public Comments

The public has expressed the following varied viewpoints. The area is permeated with roads. Because the unit borders on Indian reservations and Anza-Borrego Desert State Park, the criteria for wilderness are not met. They expressed a belief that the protection of bighorn sheep is the reason for considering the unit as a wilderness area, but the bighorn sheep are not affected by man and do not need the protection of a wilderness area. The use of beehives, water troughs, and fences on public lands disqualify an area for wilderness designation. Some questioned the BLM's designation of the route to Inner Pasture as a road. Discrepancies between the Draft Initial Inventory map and the July 1979 map were noted.

Statements on land treatment and management are study phase considerations. The route to Inner Pasture is maintained and regularly used to provide access to private property and an airfield. Corrections are being made to maps as cartographic errors are detected.

CA-060-025A, Eastern McCain Valley A

I. Physical Boundaries

Anza-Borrego Desert State Park borders the unit on the north and east. Nonpublic lands border on the south. The road through Redondo Flats to the McCain Valley Road, the Manzanita-Cottonwood Road, and nonpublic lands border on the west.

II. Land Ownership

The 22,082 acres of public land encompass 639 acres of private lands. The proposed wilderness study area contains 14,573 acres of public land.

III. Description of Environment

The eastern portion of the unit is a plateau that drops off into steep canyons and mountainsides. The vegetation varies from chaparral to desert scrub. The unit is used by the peninsular bighorn sheep.

IV. Natural Condition

The western portion of the unit contains many impacts of man. They consist of roads servicing grazing developments, numerous active mining sites near Sacatone Spring and Mt. Tule, and many visible off-road vehicle trails in the "Competition Hill" area. In contrast, the eastern portion of the unit, which is proposed as a wilderness study area, contains few off-raod vehicle trails, no mining activity, and is generally unaffected by man. Bow Willow Canyon, a research natural area designated to protect its unique palm groves, enhances the natural values of the unit. A few water developments exist in the area, but are considered substantially unnoticeable.

V. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation

In the western portion of the unit, evidence of ORV use and cattle grazing reduces the primitive recreation qualities. The same factors constantly remind the user that man still intrudes in the area. The eastern portion does provide an excellent opportunity for outstanding solitude in the winding canyons. The proposed Jacumba Mountains State Wilderness Area is contiguous with the eastern border. If the areas were combined as wilderness, an outstanding opportunity for an unconfined recreation experience would be provided.

VI. Summary of Public Comments

The public has expressed the following varied viewpoints. Developed roads exist in the unit along with mines and a runway. Land was donated to the State Park for recreation and picnicking. To declare that land as wilderness would defy the terms of the donation as a wilderness area, multiple use would be eliminated in Rockhouse Canyon. This should not be allowed. Developed campgrounds, such as Lark Canyon, should not be included within a wilderness area. A heavy concentration of mining occurs at Sacatone Springs. The area should be protected under wilderness classification because it is in a natural condition and would protect bighorn sheep habitat.

Because of the marked concern over developments such as the mining claims at Sacatone Springs, the developed portions of the unit were not recommended to become wilderness study area. Statements on land treatment and management are study phase considerations.

CA-060-026, TABLE MOUNTAIN

I. Physical Boundaries

Intestate 8 defines the unit's southern boundary. Anza-Borrego Desert State park forms the western and northern boundaries. A powerline road and nonpublic lands comprise the eastern boundary.

II. Land Ownership

The entire area is composed of public land. The proposed wilderness study area, which lies in the northern portion of the intensive inventory unit, contains 958 arces.

III. Description of Environment

Table Mountain and Gray Mountain are the dominate features in the unit. A majority of the unit is complosed of sparse desert scrub vegetation. The topography is broken by several drainages with rolling hills and steep mountain slopes. The northern portion, containing the proposed wilderness study area, is composed of low rolling mountains. The central portion of the unit supports intensive off-road vehicle use.

IV. Natural Condition

Numerous intrusions, including off-road vehicle trails and mining scars, are scattered throughout the central and eastern portions of the unit. The northern portion contains a small area (958 acres) extending north from the base of a rugged ridgeline which has received little mining and off-road vehicle use. This area is contiguous to the proposed Jacumba Mountains State Wilderness Area, and thus receives consideration as a proposed wilderness study area.

V. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation

Due to the small size and intensive off-road vehicle use occurring in the lower two-thirds of this unit, opportunities for solitude or a primitive and unconfined type of recreation are limited. The northern portion does provide opportunities for solitude on a primitive and unconfined type of recreation when viewed in conjunction with the State's Proposed wilderness area in Anza-Borrego Desert State Park.

VI. Summary of Public Comments

The public has expressed the following varied viewpoints. The area should be preserved to protect the bighorn sheep. Roads and mines are located within the unit. Rockhounders should be able to drive into the unit.

Field examination did not disclose new roads in the unit. Instead, numerous vehicle ways have scarred the central section. Statements on land treatment and management are study phase considerations.

APPENDIX E

Soil Associations

The grouping of soils into associations (see Soils Map III-2) in this Environmental Impact Statement (EIS) reflects a landscape with distinct proportional patterns of soils. This normally consists of one or more major soils and at least one minor soil and it is named for the major soil (see the Soil Survey of San Diego County for detailed descriptions and locations of specific soil types).

The San Diego area has been divided into four major physiographic provinces: the desert, the mountains, the foothills, and the coastal plains (see Soils Map II-2). These provinces reflect differences in climate, soils, and land use. The EIS area is made up of two of the four provinces (desert and mountains).

The soil associations in San Diego County (34 Associations), have been assigned to eight groups. The grouping is based on soil characteristics and qualities and on location of the associations in the specified physiographic province. There are six major associations that make up the EIS area. These associations fall into three of the eight groups (described in the Soils section of Chapter II). A discussion of the applicable associations is following (see oil Survey of San Diego County, Californla 1973 for detailed descriptions of all groups and associations).

Soil Group I

1. Mecca-Indio Association

   Well-drained sandy loams and silt loams on alluvial fans, subject to occasional flooding and deposition; 0-5 percent slopes.

   This association is made up of soils that developed in alluvium derived from acid igneous rock and mica schist. It occurs in the desert.

   The elevation ranges from 100 to 2,500 feet. The mean annual precipitation is between 3 and 8 inches, and the mean annual air temperature between 70-74 degrees F. The frost-free season is 220 to 275 days. The vegetation consists mostly of desert shrubs, cactus, and annual grasses.

   This association occupies about 14% of the EIS Area. Mecca soils make up about 50% of the association, and Indio soils about 40%. Rositas and Carrizo soils and small areas of moderately to strongly saline Indio soils make up the remaining 10%.

   Mecca soils are brown and yellowish-brown coarse sandy loams, sandy loams, or fine sandy loams. Indio soils are pale-brown silt loam to a depth of about 45 inches, and below this pale-brown fine sandy loam. Both soils are slightly saline. Free water is seldom close enough to the surface to create a problem.

Irrigated areas are used for crops, most commonly cotton, dates, alfalfa, and small grain. Non-irrigated areas are used for range.

3. Rositas-Carrizo Association

Somewhat excessively drained and excessively drained loamy coarse sands to very gravelly sands on alluvial fans; 2 to 9 percent slopes.

This association is made up of soils that developed in alluvium derived from acid igneous rock and mica schist. It occurs in the desert. The elevation ranges from 100 to 2,000 feet. The mean annual precipitation is between 4 to 7 inches, and the mean annual air temperature between 68-74 degrees F. The frost-free season is 210 to 270 days. The vegetation consists mostly of desert shrubs, cactus, and annual grasses.

This association occupies about 12% of the EIS area. Rositas soils make up about 60% of the association, and Carrizo soils about 25%. Mecca soils and small areas of sand dunes make up the remaining 15%.

Rositas soils are somewhat excessively drained, light brownish-gray loamy coarse sands and fine sands that have a substratum of pale-brown fine gravelly loamy coarse sand. Carrizo soils are excessively drained, very pale brown very gravelly sands and fine sands. They have a substratum of very pale brown very gravelly coarse sand.

Irrigated areas of Rositas soils are used for citrus, alfalfa, and pasture. Non-irrigated areas are used for range. Carrizo soils are too coarse textured for irrigated farming, but they provide a good source of sand and gravel for construction purposes.

Soil Group V

16. La Posta-Kitchen Creek Association, Rocky, Eroded

Somewhat excessively drained loamy coarse sands over decomposed granodiorite; 5 to 15% slopes.

This association is made up of soils that developed in material derived from granitic rock. It occurs on uplands in the mountains. The elevation ranges from 2,000 to 4,500 feet. The mean annual precipitation is between 12 and 20 inches, and the mean annual air temperature between 56-58 degrees F. The frost-free season is 160 to 190 days. The vegetation consists of chaparral, mainly chamise, red shank, scrub oak, and flattop buckwheat.

This association occupies about 11% of the EIS Area. La Posta soils make up about 70% of the association, and Kitchen Creek about 20 percent. Mottsville and Tollhouse soils make up the remaining 10 percent.

La Posta soils have a surface layer of grayish-brown loamy coarse sand and a substratum of brown loamy coarse sand. Below this is decomposed granodiorite. Rock outcrops and boulders cover 2 to 10% of the surface. Kitchen Creek soils have a surface layer of darkbrown loamy coarse sand and a subsoil of pale-brown coarse sandy loam. Below this is decomposed granodiorite.

These soils are used mainly for range, wildlife habitat, and watershed. Large areas would be suitable for farming or for housing developments if water could be made available.

17. Tollhouse-La Posta Rock Land Association, Eroded

Excessively drained and somewhat excessively drained coarse sandy loams and loamy coarse sands over granitic rock, and areas of rock land; 9 to 65% slopes.

This association is made up of soils that developed in material derived from decomposed granodiorite. It occurs on uplands in the mountains.

The elevation ranges from 2,000 to 5,000 feet. The mean annual precipitation is between 15 and 20 inches, and the mean annual air temperature between 56-58 degrees F. The frost-free season is 140 to 190 days. The vegetation is mainly chaparral and a few annual grasses and forbs.

This association occupies about 8% of the EIS Area. Tollhouse soils make up about 45% of the association, La Posta soils about 35%, and acid igneous rock land about 10%.

Tollhouse soils are excessively drained. They have a surface layer of dark grayish-brown course sandy loam that is underlain by hard granitic rock. La Posta soils are somewhat excessively drained. They have a surface layer of grayish-brown laomy coarse sand and a substratum of brown loamy coarse sand that is underlain by weathered granodiorite. Rock land consists of areas where 50 to 90% of the surface is covered with boulders and outcrops of acid igneous rock. Very shallow soil material occurs in pockets between the rocks.

The soils of this association are used mainly for range, watershed, and wildlife habitat.

18. Sheephead Association, Rocky

Well-drained cobbly fine sandy loams over fractured mica schist; 9-65% slopes.

This association is made up of soils that developed in material derived from mica schist. It occurs in the mountains. The elevation ranges from 3,000 to 6,000 feet. The mean annual precipitation is between 20 and 30 inches, and the mean annual air temperature between 56-58 degrees F. The frost-free season is 160 to 185 days. The vegetation is chaparral, including chamise and manzanita, and a few annual grasses.

This association occupies about 6% of the EIS Area. Sheephead soils make up about 70% of the association. Tollhouse and Holland soils make up the remaining 30%.

Sheephead soils have a surface layer of dark grayish-brown cobbly fine sandy loam. Below this is fractured mica schist. Rock outcrop covers 2-10% of the surface.

These soils are used mainly for range, watershed, and wildlife habitat.

Soil Group VIII

34. Rock Land Association

Dominantly exposed bedrock and very large boulders. This association is 50-90% exposed bedrock and very large boulders. It occurs in the desert, in the mountains, and in the foothills. The outcrops and boulders are chiefly granodiorite, quartz diorite, gabbro, mica schist, metavolcanic rock, and metasedimentary rock. A thin mantle of soils occurs in pockets between the rock outrops.

This association occupies more than 49% of the EIS Area. Acid igneous rock land makes up 75% of the association. Metamorphic rock land and other rocky soils make up the remaining 25%. Rockland has no value for farming or ranching. It is used mainly for watershed and wildlife habitat.

APPENDIX F
VISUAL RESOURCES IMPACTS

Tables 2, 3, 4, 5, and 6, present the visual impacts of the five grazing alternatives by management unit. Symbols used in the tables are identified in TABLE 1.

TABLE 1

FIRST LETTER	SECOND LETTER	THIRD LETTER
L= Landform	F= Form	N= None
V= Vegetation	L= Line	W= Weak Contrast
S= Structures	C= Color	M= Moderate Contrast
	T= Texture	S= Strong Contrast

TABLE 2
VISUAL RESOURCE IMPACTS
GRAZING ALTERNATIVE 1

BLM Management Units	Key Observ. Point(s)	MFP Step III VRM Land Class	Land Treatments	Grazing Devel.	Grazing Level	Comments
San Ysidro Mtn.	1	III		V/L-W V/T-W	V/T-W	Vegetation line from border fence along the western boundary with the Los Coyotes Indian Reservation short duration views only. Meets VRM Class requirements.
San Felipe Hills	2	IV		V/L-W S/L-W V/T-W	V/T-W	Weak vegetation and structural line created from fence construction. Short duration, inferior views only. Currently, no structure meets VRM Class requirements.
Julian/Banner	3,4,5	II		V/L-W		Weak contrast created vegetation with the construction of fences Not visible from KOP 3 and only short duration from KOPs 4 and 5. Other prominent lines in vegetation are visible Meets VRM Class requirements.
Oriflamme	6	II/III	V/F-W V/L-MTOS V/C-MTOS V/T-MTOS	V/L-W		Existing treatment creates moderate to strong contrasts in vegetative line, color and texture. Rehabilitation is needed. Views are short duration but superior. Exclosure fence will create weak vegetation line contrast. Does not meet VRM class requirements.

Vallecito Valley	7,8,9,10	II/III	V/L-W V/C-W		V/L-W V/C-W V/T-W	Weak contrasts are anticipated as exclosure fence will permit growth on public land while grazing continues on adjacent private land. Vegetative line and color will be affected most. Contrast only from KOP (superior view). Meets VRM Class requirements.
Candbrake/ Inner Pasture	11,12,13	III/II				No contrasts are expected by this allotment. Meets VRM Class Requirements.
McCain Valley	14			V/T-W		New fences cannot be viewed from KOP. Some improvement in vegetation density hence positive impact to vegetation texture element.
Carrizo Gorge	15	II				No contrasts are anticipated as no developments are proposed. Existing fences and water developments are not considered intrusions as they are not readily visible. Meet VRM class requirements.
Table Mountain	16	II/III				No contrasts are anticipated by this alternative. Meets VRM class requirements.

TABLE #3
VISUAL RESOURCES IMPACT
GRAZING ALTERNATIVE - 2

BLM Management Units	Key Observ. Point(s)	MFP Step III VRM Land Class	Land Treat-Ments	Grazing Develop-Ments	Grazing Levels	Comments
San Ysidro Mtn.	1	III		V/L-W	V/C-WtoN	Same as for No Grazing. Meets VRM requirements.
San Felipe Hills	2	IV	V/F-W V/L-W V/C-M V/T-W	S/F-W S/C-W		Vegetative contrast created from control burn. Prominent control anticipated in color and line elements. Views are inferior and of short duration. As vegetation regrows, contrast will fade. Structural contrast same as Alt. 1. Meets VRM Class requirement
Julian/Banner	3,4,5,	II	V/F-W V/L-MtoS V/C-MtoS V/C-MtoS V/T-MtoS	V/L-W		Moderate to possible strong. Contrast is created by burning, especially from Inspiration Point. Vegetation is solid and dark with few natural lines. Burn would create marked lines and color changes, solid to patchy texture. Development would not be obvious except from KOP. Does not meet VRM requirements

Oriflamme	6	II/III	V/F-W V/L-StoM V/C-StoM V/T-StoM	V/L-W	Land treatment will intensify existing vegetative line, color and texture contrast as current growth will be removed Superior viewing position but short duration from KOP. With reseeding, contrasts (long term) should reduce to moderate. Does not meet VRM Class requirements.
Vallecito Valley	7,8,9,10	II/III		V/L-W V/C-WtoN	Fences will create minor contrasts from superior viewing locations. Vegetative line and possible color. Inferior KOPs (7 &10) will not be impacted by developments. Meets VRM class requirements
Canebreak/Inner Pasture	11,12,13	III/II		V/L-W V/C-W	Fences and water developments are expected to create minor vegetation density changes and the long term. However, new fences parallel KOP II (inferior view). Most water developments in Class III area. Meet VRM class requirements

McCain Valley	14	II/III	V/F-W V/L-M V/C-M V/T-M	V/T	Major contrasts will result from prescribed burns. Especially in the northern region of the unit (Superior view of long duration). Also, burns will create visible line as allotment borders will be used. Solid to patchy texture. Short term impact due to regrowth. Does not meet VRM Class requirements.
Carrizo Gorge	15	II			Few, if any developments will be visible from KOP. Reduction in grazing use in the unit will generally improve vegetative density. Meets VRM requirements.
Table Mountain	16	II/III			Developments will now be in view from KOP. No contrasts are anticipated. Meets VRM class requirement.

Table 4
VISUAL RESOURCE IMPACT
GRAZING ALTERNATIVE - 3

BLM Management Units	Key Observ. Point(s)	MFP Step III VRM Land Class	Land Treat-ments	Grazing Develop-ments	Grazing Level	Comments
San Ysidro Mtn.	1	III		V/L-W		Riparian habitat protected. Vegetation line created along boundary of Los Coyotes Indian Reservation. Short duration views only. Meets VRM class requirements.
San Felipe Hills	2	IV		V/L-W S/F-W S/C-W		Water developments will create weak contrast where vegetation is removed Inferior views of short duration only. Contrast weak to none. Structural contrast same as Alt. I. Meets VRM Class requirements.
Julian/Banner	3,4,5	II	V/F-W V/L-MtoS V/C-MtoS V/T-MtoS	V/L-W		Contrasts created are same as for Alt. 2. Does not meet VRM class requirements.
Oriflamme	6	II/III	V/F-W V/L-StoM V/C-StoM V/T-StoM	V/L-W		Contrast created will be identical to those of the Intense Use Alternative. (Alt. 2) Does not meet VRM class requirements.

BLM Management Units	Key Observ. Point(s)	MFP Step III VRM Land Class	Land Treat-ments	Grazing Develop-ments	Grazing Level	Comments
Vallecito Valley	7,8,9,10	II/III		V/L-WtoN V/L-WtoN	V/L-WtoN V/C-WtoN	Vegetative line and color contrasts are expected from superior KOP's (KOP's 8 & 9) Meets VRM Class requirements.
Canebreak/Inner Pasture	11,12,13	III/II		V/L-WtoN V/L-WtoN		Contrasts same as Intense Use Alternative (Alt. 2) Meets VRM Class requirements.
McCain Valley	14	II/III	V/F-W V/L-M V/C-M V/T-M		V/T-W	Same as for Intense Use Alternative (Alt. 2) Does not meet VRM Class requirements.
Carizo Gorge	15	II				Contrasts are the same as for the Intense Use Alternative (Alt. 2) Meets VRM Class requirements.
Table Mountain	16	II/III				Contrasts are similar to those identified for the Intense Use Alternative. Meets VRM Class requirements.

TABLE 5
VISUAL RESOURCE IMPACTS
GRAZING ALTERNATIVE - 4

BLM Management Unit	Key Observ. Point(s)	MFP Step III VRM Land Class	Land Treat- ments	Grazing Develop- ment	Grazing Level	Comments
San Ysidro Mtn.	1	III		V/L-W		Vegetation line created by border fence along Los Coyote Indian Reservation. Short Duration views only. Meets VRM Class requirements.
San Felipe Hills	2	IV		V/L-W S/C-W S/F-W		Contrasts created are similar to Alt. 3.
Julian/Banner	3,4,5,	II	V/F-W V/L-MtoS V/C-MtoS V/T-MtoS	V/L-W		Contrasts created are the same as for Alternative 2. Does not meet VRM Requirements.
Oriflamme	6	II/III	V/F-W V/L-MtoS V/C-MtoS V/T-MtoS	V/L-W		Generally the same as No Grazing Alternative as rehabilitation is not contemplated. Does not meet VRM class requirements.
Vallecito Valley	7,8,9,10	II/III		V/L-WtoN V/C-WtoN	V/L-WtoN V/C-WtoN	Same as Proposed Action (Alternative 3) Meets VRM Class requirements.
McCain Valley	14	II/III		V/T-W		Contrasts the same as Intensive Use Alternative (Alt. 2) Meets VRM Class requirements.
Carrizo Gorge	15	II				Few, if any developments will be visible from KOP. Reduction in grazing use in the unit will generally improve vegetative density. Meets VRM requirements.

Canebrake/Inner Pasture	11,12,13	III/II	V/L-WtoN	Contrasts similar to intense Use Alternative. (Alt. 2) except contrasts will be of a smaller scale due to fewer miles of fence to be constructed. Meets VRM Class requirement
Table Mountain	16	II/III		No contrast are anticipated. Same as for Intense Use Alternative. Meets VRM class requirement

TABLE 6
VISUAL RESOURCES IMPACT
GRAZING ALTERNATIVE - 5

BLM Management Units	Key Obeserv. Point(s)	MFP Step III VRM Land Class	Land Treat-Ments	Grazing Develop ments	Grazing Level	Comments
San Ysidro Mtn.	1	III				No contrasts created as no treatments, developments, or grazing are proposed. Meets VRM class requirements.
San Felipe Hills	2	IV				No contrasts created. Meets VRM Class requirements
Julian/Banner	3,4,5,	II				No contrasts created Grazing has had little influence on the visual resources of the unit. Meets VRM class requirements.
Oriflamme	6	II/III	V/F-W V/L-MtoS V/C-MtoS V/T-MtoS	V/L-W		Same as No Grazing Alternative. Rehabilitation is needed. Does not meet VRM class requirements.
Vallecito Valley	7,8,9,10	II/III				No contrasts are expected by this alternative. Meets VRM class requirements.
Canebrake/Inner Pasture	11,12,13	III/II				No contrasts created as the only intrusion is an existing facility. Meets VRM class requirements.

McCain Valley	14	II/III	No contrasts are anticipated as grazing activity has not had a significant impact on existing visual resources. Meets VRM class requirements.
Carrizo Gorge	15	II	No contrast will be created by this alternitive. Meets VRM class requirement
Table Mountain	16	II/III	No contrasts are anticipated. Meets VRM class requirement

1)San Diego Co. Highway s22;2)San Diego Co Highway s2:3)Inspiration Point;4)Chariot Canyon; 5)Banner Grade (HWY78);6)San Diego Co. Highway s1;7)San Diego Co Highway s2;8)Mt. Laguna; 9)Quimme Point;10)Vallecito Park;11) Inner Pasture;12)Crawford Ranch;13)Canebrake Canyon; 14)McCain Valley Road;15)Proposed Intrepretive Road;16)Interstate 8

APPENDIX G
REPRESENTATIVE RANCH BUDGET
EASTERN SAN DIEGO COUNTY EIS AREA CATTLE ENTERPRISE

$400 HEAD

SALES:	HEAD	AVG. WGT.	PRICE/CWT	TOTAL VALUE
Steers	162	400	$51.00	$ 33,048
Heifers	98	375	40.33	14,821
Cull Cows	52	950	21.50	10,621
Total				$ 58,490
Total/Cow	$146.23			

CASH COSTS	TOTAL VALUE	COST/COW
BLM Permit	$ 375.	$ .94
Forest Permit	5,374.	13.44
Hay	28,224.	70.56
Salt & Minerals	296.	.74
Vet & Medicine	1,860.	4.65
Trucking	823.	2.06
Marketing	1,232.	3.08
Fuel & Lub	2,052.	5.13
Repairs	1,496.	3.74
Labor	156.	.39
Interest on Operating Capital	2,490.	6.23
Land Tax	40,000.	100.00
General Farm Overhead	2,360.	5.90
Insurance	1,609	4.02
Other Taxes	187.	.47
Total	$88,534.	$221.35

OTHER COSTS	TOTAL VALUE	COST/COW
Value of Family Labor	$15,984.	$39.96
Depreciation	3,593	8.98
Interest on investment other than land	17,255.	43.14
Interest on Land Investment	$160,000.	400.00
	$196,832.	$492.08
Return above cash costs	-138,342.	-345.85
Return to Total Investment	-157,919.	-394.80
Return to Land Investment	-175,174.	-437.94

Source:Adapated from Budget supplied by Dr. Kerry Gee, ESCS (USDA) at Ft. Collins, CO.

APPENDIX H - TABLE H-1

List of Amphibians and Reptiles occurring in ten habitat types in Eastern San Diego County.

Species Common Name (Species Scientific Name)	Presence (P) or Suspected Presence (S)									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
Large-blotched Salamander (Ensatina eschscholtzi klauberi)	P	S	S			S	S			
Garden Slender Salamander (Batrachoseps pacificus major)		S	S				S			
Arboreal Salamander (Aneides lugubris)		S					S			
Western Spadefoot Toad (Scaphiopus hammondi)		S	P	S	S	S	S			
Western Toad (Bufo boreas halophilus)		P	P		P	P	P	P		
Southwestern Toad (Bufo microscaphus)							S			
Red-spotted Toad (Bufo punctatus)			P	S	P			P	P	S
California Tree Frog (Hyla Californiae)	S	S	P	S	P	P	S		P	
Pacific Tree Frog (Hyla regilla)	S	P	P	S	P	S	P	P	P	
Banded Gecko (Coleonyx variegatus variegatus)					P			P	P	P
Magic Gecko (Coleonyx sp.)					S				S	
Leaf-toed Gecko (Phyllodactylus xanti nocticolus)					S				P	
Desert Iguana (Dipsosaurus dorsalis dorsalis)								P	P	S
Chuckwalla (Sauromalus obesus obesus)									P	P
Zebra-tailed Lizard (Callisaurus draconoides)					P			P	P	P
Collared Lizard (Crotaphytus reticulatus)					P				P	S
Leopard Lizard (Gambelia wislizenii)			P	S	P			P	P	S
Desert Spiny Lizard (Sceloporus magister uniformis)								P	P	S
Granite Spiny Lizard (Sceloporus orcutti)	P	P	P	P	P	P	P		P	
Western Fence Lizard (Sceloporus occidentialis)	P	P	P	P	P	P	P			
Sagebrush Lizard (Sceloporus graciosus vandenburghianus)	P	S					P			
Side-blotched Lizard (Uta stansburiana)		P	P	P	P	P	P	P	P	S
Long-tailed Brush Lizard (Urosaurus graciosus graciosus)								P	P	S
Small-scaled Lizard (Urosaurus microscutatus)		S	P	S	P	S	S	P	P	
Banded Rock Lizard (Streptosaurus mearnsi)					P				P	
Coast Horned Lizard (Phrynosoma coronatum blainvillei)	P	P	P	P	P					
Desert Horned Lizard (Phrynosoma platyrhinos claidiarum)									P	S
Granite Night Lizard (Xantusia henshawi henshawi)		P	P	S	P	S	S			
Desert Night Lizard (Xantusia vigilis vigilis)			P		P				P	

Species Common Name (Species Scientific Name)	Presence (P) or Suspected Presence (S)									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
Western Skink (*Eumeces skiltonianus skiltonianus*)	P	S					P			
Gilbert's Skink (*Eumeces gilberti rubricaudatus*)	S	P	P	P	P	P	P		P	
Western Whiptail (*Cnemidophorus tigris*)	P	P	P	P	P	P	P	P	P	S
Southern Alligator Lizard (*Gerrhonotus multicarinatus webbi*)	S	P	S				S			
California Legless Lizard (*Anniella pulchra pulchar*)	S	P	S	S	P	S	S	S	P	
Western Blind Snake (*Leptotyphlops humilis*)	S	S		S	S	S	S	S	P	S
Costal Rosy Boa (*Lichanura trivirgata roseofusca*)		P	P	S	P	S	P	P	P	
San Diego Ringneck Snake (*Diadophis punctatus similis*)	S	S	S	P	P	S	S		S	
Spotted Leaf-nosed Snake (*Phyllorynchus decurtatus perkinsi*)								P	P	P
Western Racer (*Coluber constrictor mormon*)	S	S	S	S		S	S			
Red Racer (*Masticophis flagellum piceus*)		P	P	S	P	P	S	P	P	S
Desert Patch-nosed Snake (*Salvadora hexalepis hexalepis*)					P				P	S
Coastal Patch-nosed Snake (*Salvadora hexalepis virgultea*)		P	P	S	P	S	S			
Striped Racer (*Masticophis lateralis lateralis*)	P	P	P	P	P	P	P			
California Glossy Snake (*Arizona elegans occidentalis*)		P	P	P	P	P	S	S	P	
Desert Glossy Snake (*Arizona elegans eburnata*)								S	P	S
San Diego Gopher Snake (*Pitouphis melanoleucus annectens*)	P	P	P	P	P	P	P	S	P	S
California Kingsnake (*Lampropeltis getulus californiae*)	P	P	P	P	P	S	P	S	P	S
California Mountain Kingsnake (*Lampropeltis zonata pulchra*)	S	S	S			S	S			
Long-nose Snake (*Rhinocheilus lecontei lecontei*)		P	P	S	P	S	S	S	P	S
Two-lined Garter Snake (*Thamnophis couchi hammondi*)	S	P	P	S	S	S	P	S	S	
Western Shovel-nosed Snake (*Chionactis occipitalis annulata*)								P	P	P
Western Black-headed Snake (*Tantilla planiceps eiseni*)		S	S	S	S	S	S			
Desert Black-headed Snake (*Tantilla planiceps transmontana*)					P			S	S	S
California Lyre Snake (*Trimorphodon biscutatus vandenburghi*)		S	P	S	S	S	P	S	P	S
San Diego Night Snake (*Hypsiglena torquata klauberi*)		S	P	S		S	S			
Desert Night Snake (*Hypsiglena torquata deserticola*)		S	P	S	P	S	S	S	P	S
Red Diamondback Rattlesnake (*Crotalus ruber ruber*)					P	S	S	P	P	S
Speckled Rattlesnake (*Crotalus mitchelli pyrrhus*)	P	P	P	P	P	S	P	P	P	S
Sidewinder (*Crotalus cerastes laterorepens*)		P						P	P	P
Western Rattlesnake (*Crotalus viridis helleri*)	P	P	P	P	P	P	P			

APPENDIX H- TABLE H-2

List of Bird Species occurring in ten habitat types in Eastern San Diego County.

Species Common Name (Species Scientific Name)	Status and Abundance[1]									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
Black-crowned Night Heron (Nycticorax nycticorax)		M								
Green-winged Teal (Anas crecca)									M	
Turkey Vulture (Cathartes aura)	S	OSd	USd	USd	OSd	S	M	S	OSd M	S
White-tailed Kite (Elanus leucurus)		S	S	S	Sd	M	S			
Goshawk (Accipiter gentilis)	S	S					S			
Sharp-shinned Hawk (Accipiter striatus)	S	W	M	S	W		W	S		
Cooper's Hawk (Accipiter cooperii)		CY	Y	P	Sd	S	CY	S	P	S
Red-tailed Hawk (Buteo jamaicensis)	Y	CY	CY	CY	CY	S	CY	CY	CY	S
Red-shouldered Hawk (Buteo lineatus)		Sd	Y				Sd			
Swainson's Hawk (Buteo swainsoni)		S	P	S	S	S	S	S	P	
Zone-tailed Hawk (Buteo albonotatus)					P					
Rough-legged Hawk (Buteo lagopus)			S	S	S	S		S	S	S
Ferruginous Hawk (Buteo regalis)			P	P	P	S		S	S	S
Harris' Hawk (Parabuteo unicinctus)					S		S	S	S	S
Golden Eagle (Aquila chrysaetos)			Y	S	Y	Y	Y	Y	Y	S
Marsh Hawk (Circus cyaneus)			S	S	M	P		P	P	S
Osprey (Pandion haliaetus)			M							
Prairie Falcon (Falco mexicanus)			Sd	S	Sd	S	Sd	S	Y	S
Peregrine Falcon (Falco peregrinus)		S	S	S	S	S	S	S	S	S
Merlin (Falco columbarius)		S	S	S	S	S	S	S	S	S
American Kestrel (Falco sparverius)		S	Y	Y	P	S	P	P	P	S
California Quail (Lophortyx californicus)	Y	Y	Y	Y	C	S	AY	Y	CY	
Gambel's Quail (Lophortyx gambelii)								Y	Y	S
Mountain Quail (Oreortyx pictus)	Y	S	Y	S	UY	S	CY	S	UY	

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[1] S = Suspected to occur; P = Known to be present, but season and abundance not known; Y = Year-round resident; Sd = Summer resident only; W = Winter resident only; M = Migrant only; A = Abundant; C = Common; U = Uncommon; O = Occasional.

Species Common Name (Species Scientific Name)	Status and Abundance[1]									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
Common Snipe (Capella gallinago)							S			
Spotted Sandpiper (Actitis macularia)							S		M	
Band-tailed Pigeon (Columba fasciata)	Y	UY	UY						P	
White-winged Dove (Zenaida asiatica)								Y	Y	S
Mourning Dove (Zenaida macroura)	P	CSd	P	Sd	CSd	S	CSd	CSd	CY	S
Roadrunner (Geococcyx californianus)	UY	UY	CY	CY	CY	S	Y	CY	CY	S
Barn Owl (Tyto alba)		UY	P	S	P	P	S	S	P	S
Screech Owl (Otus asio)	S	P					P			
Great Horned Owl (Bubo virginianus)	S	CY	P	P	CY	P	CY	S	CY	S
Burrowing Owl (Speotyto cunicularia)					S			S	P	S
Long-eared Owl (Asio otus)	S	S					S		P	
Spotted Owl (Strix occidentalis)		P								
Short-eared Owl (Asio flammeus)		S				S				
Saw-whet Owl (Aegolius acadicus)	S	S					S			
Poor-will (Phalaenoptilus nuttallii)		Sd	Sd	S	Sd	Sd	S	S	Sd	S
Lesser Nighthawk (Chordeiles acutipennis)			S	S	Sd	Sd		S	P	S
Vaux's Swift (Chaetura vauxi)	S	S	S	S	S	S	S	S	S	S
White-throated Swift (Aeronautes saxatalis)	S	S	Sd	Sd	P	S	Sd	S	P	S
Black-chinned Hummingbird (Archiliochus alexandri)		S					S			
Costa's Hummingbird (Calypte costae)		S	UY	S	S	S		S	Y	S
Anna's Hummingbird (Calypte anna)	UY	CY	CY	P	CY	S	CY	OY	OY	S
Rufous Hummingbird (Selasphorus rufus)	S	M					S		M	
Allen's Hummingbird (Selasphorus sasin)	S	Sd	S	S						
Calliope Hummingbird (Stellula calliope)	S	S	S	S		S	S			
Common Flicker (Colaptes auratus)	CY	CY	UY	S	UY		UY	UY	UY	S
Acorn Woodpecker (Melanerpes formicivorus)	CY	CY	P				CY			
Lewis' Woodpecker (Asyndesmus lewis)	S	U								
Red-breasted Sapsucker (Sphyrapicus varius ruber)	S									
Hairy Woodpecker (Dendrocopos villosus)	S	UY					S			
Downy Woodpecker (Dendrocopos pubescens)	UY	S					S			

Species Common Name (Species Scientific Name)	Status and Abundance[1]									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
Ladder-backed Woodpecker (Dendrocopos scalaris)		OY	UY	UY	UY		UY	UY	UY	S
Nutall's Woodpecker (Dendrocopos nuttalli)	UY	UY	UY				UY			
Williamson's Sapsucker (Sphyrapicus thyroideus)	UY									
White-headed Woodpecker (Dendrocopos albolarvatus)	UY						S			
Western Kingbird (Tyrannus verticalis)		CSd	USd	S	S	S	USd		USd	
Ash-throated Flycatcher (Myiarchus cinerascens)	USd	CSd	CSd	USd	CSd	S	CSd	CSd	CSd	
Say's Phoebe (Sayornis saya)		S	SdY	S	M	USd	Y	CSd	CY	S
Willow Flycatcher (Empidonax traillii)		M					Sd		Sd	
Dusky Flycatcher (Empidonax oberholseri)	S	S	S	S						
Gray Flycatcher (Empidonax wrightii)	S	S					S			
Western Flycatcher (Empidonax difficilis)	Sd	M	Sd		P		Sd		M	
Western Wood Pewee (Contopus sordidulus)	OSd	OSd	OSd				CSd			
Olive-sided Flycatcher (Nuttallornis borealis)	S	M			M		S	M		
Vermilion Flycatcher (Pyrocephalus rubinus)								S	OSd	OSd
Horned Lark (Eremophila alpestris)		UY	UY	UY	UY	CY			S	S
Violet-green Swallow (Tachycineta thalassina)	CSd	USd	USd				CM		M	
Tree Swallow (Iridoprocne bicolor)	S	S					S			
Bank Swallow (Riparia riparia)		S	S	S	S	S	S	S	S	
Rough-winged Swallow (Stelgidopteryx ruficollis)		S	S	S	S	S	S	S	S	
Barn Swallow (Hirundo rustica)		S	S	S	S	S	S	S	S	
Cliff Swallow (Petrochelidon pyrrhonota)	S	S	M	S	S	S	S	S	S	
Steller's Jay (Cyanocitta stelleri)	CY									
Scrub Jay (Aphelocoma coerulescens)	Y	AY	AY	CY	CY	P	AY			
Common Raven (Corvus corax)	P	CY	CY	CY	CY	S	P		CY	S
Common Crow (Corvus brachyrhynchos)		P				S	P			
Clark's Nutcracker (Nucifraga columbiana)	S									
Mountain Chickadee (Parus gambeli)	CY	P	P							
Plain Titmouse (Parus inornatus)	CY	UY	P		P		OY			
Verdin (Auriparus flaviceps)					P			Y	UY	S
Bushtit (Psaltriparus minimus)		Y	UY	UY	UY		Y			

Species Common Name (Species Scientific Name)	Presence (P) or Suspected Presence (S)									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
White-breasted Nuthatch (*Sitta carolinensis*)	CY	UY					UY			
Red-breasted Nuthatch (*Sitta canadensis*)	S									
Wrentit (*Chamaea fasciata*)	Y	UY	CY	UY	CY		CY			
House Wren (*Troglodytes aedon*)	CY	UY	UY				UY		UY	
Bewick's Wren (*Thryomanes bewickii*)	CY	CY	CY	CY	CY	S	CY	CY	CY	S
Cactus Wren (*Campylorhynchus brunnelcapillus*)			P	P	UY	CY	S	CY	CY	S
Canyon Wren (*Catherpes mexicanus*)	P	P	OY	S	OY	S	OY	UY	OY	
Rock Wren (*Salpinctes obsoletus*)	S	S	OY	OY	CY		UY	CY	CY	S
Mockingbird (*Mimus polyglottus*)			U					U	U	S
California Thrasher (*Toxostoma redivivum*)		CY	CY	CY	CY	S	CY	UY	OY	
LeConte's Thrasher (*Toxostoma lecontei*)					UY			UY	UY	S
Sage Thrasher (*Oreoscoptes montanus*)					S			S	S	S
American Robin (*Turdus migratorius*)	S	S	M				S			
Hermit Thrush (*Catharus guttata*)	S	S	S	S	M	S	S	M	S	S
Swainson's Thrush (*Catharus ustulata*)	S	S	S				S		M	
Veery (*Catharus fuscescens*)								M		
Western Bluebird (*Sialia mexicana*)	CY	UY	UY	S	P	S	UY		P	S
Townsend's Solitaire (*Myadestes townsendi*)	S	W	S	S	S		S			
Blue-gray Gnatcatcher (*Polioptila caerulea*)		P	P	UY	P	S	S	S	M	S
Black-tailed Gnatcatcher (*Polioptila melanura*)			P		P			P	CY	S
Ruby-crowned Kinglet (*Regulus calendula*)	CW	CW	CW	S	W	S	CW	S	UW	S
Water Pipit (*Anthus spinoletta*)						S		S	S	
Cedar Waxwing (*Bombycilla cedrorum*)		S	S	S	S		S	S	S	
Phainopepla (*Phainopepla nitens*)		P	USd	USd	C	CSd	USd		Sd	S
Loggerhead Shrike (*Lanius ludovicianus*)		UY	UY	UY	CY	CY		CY	CY	S
Starling (*Sturnus vulgaris*)		O	O				O			
Hutton's Vireo (*Vireo huttoni*)	S	P	S							
Bell's Vireo (*Vireo bellii*)	S		S				S			
Solitary Vireo (*Vireo solitarius*)	S	S	S	S	S	S	S	S	S	S
Warbling Vireo (*Vireo gilvus*)	S	M	S	M	M		S	S	M	S

Species Common Name (Species Scientific Name)	Status and Abundance[1]									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
Black-and-White Warbler (*Mniotilta varia*)	S	S					S	S	S	S
Orange-crowned Warbler (*Vermivora celata*)	S	S	S	S	M		CM	S	S	S
Nashville Warbler (*Vermivora ruficapilla*)	S	S	S	S	S		CM	UM	S	S
Virginia's Warbler (*Vermivora virginiae*)	S	S	S	S	S	S	S	S	S	S
Yellow Warbler (*Dendroica petechia*)	S	S	M	S	S		SOY	S	M	S
Yellow-rumped Warbler (*Dendroica coronata*)	S	M	M	S	S		M	S	P	S
Black-throated Gray Warbler (*Dendroica nigrescens*)	S	UM	UM	S	UM		UM	S	UM	S
Townsend's Warbler (*Dendroica townsendi*)	S	S	M				S		M	
Hermit Warbler (*Dendroica occidentalis*)	S	S			S		S	S	S	S
MacGillivray's Warbler (*Oporomis tolmiei*)	S	UM	UM	S	UM		UM	S	UM	S
Yellow-breasted Chat (*Icteria virens*)	S	S	S				S	S	S	S
Common Yellowthroat (*Geothlypis trichas*)							S		M	S
Wilson's Warbler (*Wilsonia pusilla*)	S	CM	UM	S	CM		CM	CM	CM	
American Redstart (*Setophaga ruticilla*)	S	S					S			
House Sparrow (*Passer domesticus*)										
Western Meadowlark (*Sturnella neglecta*)		S	P	P	P	S	P	S	P	S
Tricolored Blackbird (*Agelaius tricolor*)						S				
Hooded Oriole (*Icterus cucullatus*)		S			S		USd	USd	P	S
Scott's Oriole (*Icterus parisorum*)		S	Sd	USd	Sd	S	S	USd	CSd	S
Northern Oriole (*Icterus galbula*)	S	CM	S	M	P	S	UM		UM	
Brewer's Blackbird (*Euphagus cyanocephalus*)						S				
Brown-headed Cowbird (*Molothrus ater*)						S	S			
Western Tanager (*Piranga ludoviciana*)	S	M	M	S	PM	S	M	CM	M	S
Black-headed Grosbeak (*Pheucticus melanocephalus*)		UM	UM		UM		UM	UM		
Lazuli Bunting (*Passerina amoena*)	P	P	P	S	S	S	P	S	M	S
Evening Grosbeak (*Hesperiphona vespertina*)		OSd								
Purple Finch (*Carpodacus purpureus*)	S	S					S			
House Finch (*Carpodacus mexicanus*)	S	CY	P	P	CY	S	CY	CY	Y	S
Pine Siskin (*Spinus pinus*)	S	S	S	S	S	S	S	S	S	S

	Status and Abundance[1]									
Species Common Name (Species Scientific Name)	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
American Goldfinch (Spinus tristis)		S				S	S			
Lesser Goldfinch (Spinus psaltria)	S	P	P		P		CY		P	
Lawrence's Goldfinch (Spinus lawrencei)	S	Y	CM	S	CM		CM	Y	S	
Green-tailed Towhee (Chlorura chlorura)	S	S	S	S	S		M	S	S	S
Rufous-side Towhee (Pipilo erythrophthalmus)	AY	CY	AY	CY	CY		C			C
Brown Towhee (Pipilo fuscus)	P	UY	CY	CY	CY		AY		OY	
Lark Bunting (Calamospiza melanocorys)			S	S	S	S		S	S	S
Savannah Sparrow (Passerculus sandwichensis)		S				S				
Grasshopper Sparrow (Ammodramus savannorum)		S				S				
Vesper Sparrow (Pooecetes gramineus)			S	S	S	S				
Lark Sparrow (Chondestes grammacus)	Y	CY	UY	S			S			
Rufous-crowned Sparrow (Aimophila ruficeps)			S	S	S	S			P	
Black-throated Sparrow (Amphizpiza bilineata)		Y	UY	UY	CY	UY	CY	CY	CY	S
Sage Sparrow (Amphispiza belli)		U	U	OY						
Dark-eyed Junco (Junco hyemalis)	CSdW	CMW	MW	S	CMW		CMW	S	S	S
Chipping Sparrow (Spizella passerina)	UMW	UMW	S	S	S		USdW	S		
Brewer's Sparrow (Spizella breweri)			S	S	S			S	CM	S
Black-chinned Sparrow (Spizella atrogularis)		P	UY	M	M		CM			
White-crowned Sparrow (Zonotrichia leucophrys)	S	CMW	CMW	S	CMW	S	CMW	S	CMW	S
Fox Sparrow (Passerella iliaca)	S	CM	CM	S	M		M	S	S	
Lincoln's Sparrow (Melospiza lincolnii)	S	S	S	S	S		S	S	S	
Song Sparrow (Melospiza milodia)	S	S	S	S	P		M	S	S	S
Blue Grosbeak (Guiraca caerulea)	S	S	S	S	S		S	S	P	

APPENDIX H - TABLE H-3

List of Mammals occurring in ten habitat types in Eastern San Diego County.

Species Common Name (Species Scientific Name)	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
	Presence (P) or Suspected Presence (S)									
Opposum (*Didelphis marsupialis*)	S	S	S	S		S	S			
Pacific Water Shrew (*Sorex bendirei*)	S	S					S			
Gray Shrew (*Notiosorex crawfordi*)		P	P	S	S	S	S	S	S	S
Townsend Mole (*Scapanus townsendi*)	S	S								
Leafnose Bat (*Macrotus californicus*)		S	S	S	S	S	S	S	S	S
Hognose Bat (*Choeronycteris mexicana*)	S	S	S	S		S	S			
Little Brown Myotis (*Myotis lucifugus*)	S	S	S	S		S	S			
Fringed Myotis (*Myotis thysanodes*)					S			S	S	S
California Myotis (*Myotis californicus*)	S	S	S	S	S	S	S	S	S	S
Small-footed Myotis (*Myotis leibii*)	S	S	S	S		S	S			
Long-legged Myotis (*Myotis volans*)	S	S	S	S		S	S			
Long-eared Myotis (*Myotis evotis*)	S	S	S	S	P	S	S			
Yuma Myotis (*Myotis yumanensis*)	S	S	S	S	S	S	S	S	S	S
Western Yellow Bat (*Lasiurus ega*)		S	S	S	S	S	S	S	S	S
Hoary Bat (*Lasiurus cinereus*)	S	S	S	S	S	S	S	S	S	S
Red Bat (*Lasiurus borealis*)		S	S	S	S	S	S	S	S	S
Silver-haired Bat (*Lasionycteris noctivagans*)	S	S	S	S		S	S		P	
Big Brown Bat (*Eptesicus fuscus*)	S	S	S	S	S	S	S	S	S	S
Western Pipistrel (*Pipistrellus hesperus*)		S	S	S	P	S	S	S	P	S
Spotted Bat (*Euderma maculata*)	S	S	S	S	S	S	S	S	S	S
Pallid Bat (*Antrozous pallidus*)		S	S	S	S	S	S	S	S	S
Western Big-eared Bat (*Plecotus townsendi*)		S	S	S	S	S	S	S	S	S
Mexican Free-tailed Bat (*Tadarida brasiliensis*)		S	S	S	S	S	S	S	S	S
Pocketed Free-tailed Bat (*Tadarida femorosacca*)		S	S	S	S	S	S	S	S	S
Big Free-tailed Bat (*Tadarida macrotis*)		S	S	S	S	S	S	S	S	S
Western Mastiff Bat (*Eumops perotis*)		S	S	S	S	S	S	S	S	S
Black-tailed Jackrabbit (*Lepus californicus*)	P	P	P	P	P	P	P	P	P	S

Species Common Name (Species Scientific Name)	Presence (P) or Suspected Presence (S)									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
Desert Cottontail (*Sylvilagus audubonii*)		P	P	P	P	S	P	P	P	P
Brush Rabbit (*Sylvilagus bachmani*)		S	P	P			P			
Antelope Ground Squirrel (*Ammospermophilus leucurus*)		P	P	P	P	P	P	P	P	S
California Ground Squirrel (*Otospermophilus beecheyi*)	P	P	P	P	P	P	P		P	
Merriam Chipmunk (*Eutamias merriami*)	S	P	P	S	P		P		P	
Western Gray Squirrel (*Sciurus griseus*)	P	S					P			
Valley Pocket Gopher (*Thomomys bottae*)	P	P	P	P	P	S	P	P	P	S
Little Pocket Mouse (*Perognathus longimembris*)		S	S	S	S	S	S	S	P	S
Bailey Pocket Mouse (*Perognathus baileyi*)		S	S	S	S		S		P	
San Diego Pocket Mouse (*Perognathus fallax*)		S	P	S	P	S	S	S	P	S
Spiny Pocket Mouse (*Perognathus spinatus*)					S			P	P	S
Long-tailed Pocket Mouse (*Perognathus formosus*)					S			S	P	S
California Pocket Mouse (*Perognathus californicus*)	S	S	S	S	P	S	P			
Desert Pocket Mouse (*Perognathus penicillatus*)					P		P	P	P	P
Merriam Kangaroo Rat (*Dipodomys merriami*)		S	S	P	S	S	S	P	P	S
Pacific Kangaroo Rat (*Dipodomys agilis*)		S	P	S		S	P			
Desert Kangaroo Rat (*Dipodomys deserti*)								S	P	S
Western Harvest Mouse (*Reithrodontomys megalotis*)	S	S	S	S	S	S	S	S	S	S
Canyon Mouse (*Peromyscus crinitus*)	S	S	S	S	S		S			
California Mouse (*Peromyscus californicus*)	S	S	P	P		S	P			
Cactus Mouse (*Peromyscus eremicus*)			P	S	S			P	P	S
Brush Mouse (*Peromyscus boylei*)		S	P	P	P					
Pinyon Mouse (*Peromyscus truei*)			S	S	S					
Deer Mouse (*Peromyscus maniculatus*)	S	S	P	P	P	S	S	S	P	S
Southern Grasshopper Mouse (*Onychomys torridus*)		S	S	P		S	S			
White-throated Woodrat (*Neotoma albigula*)								S		S
Dusky-footed Woodrat (*Neotoma fuscipes*)	S	S	S	S	S	S	S			
Desert Woodrat (*Neotoma lepida*)		S	P	S	S	S	S	S	P	S
California Meadow Mouse (*Microtus californicus*)						S				

Species Common Name (Species Scientific Name)	Presence (P) or Suspected Presence (S)									
	Conifer-Oak Woods	Oak Groves	Mxd. Chap.	Chamise Chap.	Semi-Desert Chap.	Grassland	Riparian Woods	Desert Wash	Enrich. Des. Scrub	Creosote Scrub
Norway Rat (*Rattus norvegicus*)										
Black Rat (*Rattus rattus*)										
House Mouse (*Mus musculus*)										
Kit Fox (*Vulpes macrotis*)			P	S	S	S	S	S	P	S
Gray Fox (*Urocyon cinereoargenteus*)	P	P	P	S	P	S	S	S	P	
Coyote (*Canis latrans*)	P	P	P	P	P	P	P	P	P	S
Raccoon (*Procyon lotor*)	S	S	P	S	P	S	P	S	P	
Ringtail (*Bassariscus astutus*)	S	S	S	S	S	S	S	S	P	
Long-tailed Weasel (*Mustela frenata*)	S	S	S	S	S	S	S	S	S	S
Badger (*Taxidea taxus*)	S	P	P	P	P	S	P	S	P	S
Striped Skunk (*Mephitis mephitis*)	P	S	P	S	S	S	S	S	S	S
Spotted Skunk (*Spilogale putorius*)	P	S	P	S	S	S	S	S	P	S
Mountain Lion (*Felis concolor*)	S	S	S	P	S	S	P	S	P	
Bobcat (*Lynx rufus*)	S	P	P	P	P	S	P	S	P	S
Mule Deer (*Odocoileus hemionus*)	P	P	P	P	P	P	P	P	S	P
Peninsular Bighorn Sheep (*Ovis canadensis cremnobates*)					P			P	P	

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